NORTH AMERICAN REVIEW.

No. CCXL.

JULY, 1873.

ART. I. — 1. *Medicine in Modern Times, or Discourses delivered at a Meeting of the British Medical Association at Oxford.* London: Macmillan & Co. 1869. 12mo.

(1.) *The General Relations of Medicine in Modern Times.* By HENRY W. ACLAND, M. D., F. R. S., LL. D., etc., Regius Professor of Medicine in the University of Oxford, President of the Association.

(2.) *Clinical Observations in Relation to Medicine in Modern Times.* By SIR W. W. GULL, Bart., M. D., D. C. L. Oxon.

(3.) *Therapeutical Research in Relation to Medicine in Modern Times, as illustrated by Researches into the Action of Mercury on the Biliary Secretion.* Report by PROFESSOR J. HUGHES BENNETT, M. D., F. R. S. E., etc.

2. *The Physiology and Clinical Uses of the Sphygmograph.* By F. A. MAHOMED, Student of Guy's Hospital. London Medical Times and Gazette, 1872, Jan. 20, Feb. 3, Feb. 24, March 2, March 23, April 13, May 18, etc., etc.

3. *On the Use of the Ophthalmoscope in Diseases of the Nervous System and of the Kidneys; also in certain other General Diseases.* By THOMAS CLIFFORD ALLBUTT, M. A., M. D., Cantab., etc. London and New York: Macmillan & Co. 1871. 8vo.

4. *On the Temperature in Disease*, from the 2d German Edition [*Das Verhalten der Eigenwärme in Krankheiten.* Leipzig. 1870]. By C. A. WUNDERLICH. Translated by W. B.

Woodman. New Sydenham Society's Publications, Vol. XLIX. London. 1871. 8vo.

5. *De l'Électrization Localisée et de son Application à la Pathologie et à la Therapeutique par Courants induits et par Courants galvaniques interrompus et continus.* Par le Docteur Duchenne (de Boulogne). Troisième édition entièrement refondue, etc., etc. Paris. 1872. 8vo.
6. *On the Pathology and Treatment of Cholera.* By George Johnson, F. R. C. P., Physician to King's Hospital. Medico-Chirurgical Transactions. Vol. L. Art. X. London. 1867.

The long array of titles in medical literature we have thought proper to associate with this article need not excite in the reader any apprehension that he will be called upon to assist in the process of conventional criticism. But we have selected them for the reason that, each and all, they march upon the highest planes of medical thought, and are themselves the very standard-bearers of its advance. Upon their authority we shall rely for the ideas we hope to develop, and it is with their assistance that we propose to sketch in consecutive narration such accepted general principles and such special but essential technicalities as shall constitute in reality an essay upon the thesis of Modern Medicine.

Medical men are charged with a liability to fall into one or the other of two opposite errors. They are charged with either being too content to regard their profession exclusively as an art, and with rather exulting in the assumption of an attitude of pure empiricism, or, on the other hand, there is ascribed to them an ambition to associate medicine with the dazzling but often delusive propositions asserted from time to time with a confidence which rarely accompanies even the best demonstrated facts in science. The truth is, we cannot establish with exactness or logical precision many of the fundamental notions to which medicine, as a profession, owes its very existence. Often we have to depend upon personal conviction alone, reasoning to ourselves from facts which we cannot explain, and acting in emergencies solely upon our rapid estimates of the probable. Pure Science admits no uncertain elements, but we cannot wait for her elimination of them; and when a phy-

sician, upon a balance of probabilities alone, acts, as he must, with a promptness flush with his decision, he is only like the navigator who trusts to his instincts in the tempest as readily as to his observations in the calm.

The older physicians conducted their observations in the true spirit of science, and reasoned with a caution which grew out of their consciousness of the uncertainty of the ground to be explored, and of the intrinsic inadequacy of their methods. Within certain limits we can place far more reliance upon the results of our own observations; but with more extended and precise methods comes the possibility of being found wanting in their characteristics of patience and care; while the ingenious mechanical appliances upon which we depend may be as much the measure of weakness as the proof of strength; and though by their aid the immediate judgment is rendered less difficult, the art of judging as a process of reasoning may eventually come to languish from disuse.

Without any sympathy with purely empirical medicine, we are still less in accord with that disposition to remote theorization which assumes that the spirit of modern medicine requires us to subordinate its advance to the vast and exhaustive generalizations of the science of the day. We can fit to no place in practical medicine the new *dicta* of the speculative physicists which assert that "an action of which we are immediately cognizant is but the result of the operation of the solar heat upon and through independent and correlative existences; that all things in this system are capable only of interchange; that there can be no destruction of that which exists, and no creation of new energy"; "that the human mind itself, emotion, will, and all their phenomena were once latent in a fiery cloud"; "that all our poetry and science and art, Plato, Shakespeare, Newton, are potential in the fires of the sun."

Now, instead of demanding upon what rests this projection of human thought into the infinite unknown, some of our outposts concede the very key to our position by the surrender of all notion of a vital principle or a Final Cause. This theorem of the conservation of energy controlling the laws of affinity and bringing all vital phenomena within the domain of physical necessity enters into every conception of organic

change; and as a corollary, if we cannot separate medicine from the indirect any more than from the direct influence of science, we must be governed by such remote physical speculations, and, abandoning all previous inductions, substitute for them a mere collection of undemonstrable postulates.

We pretend to have learned the methods by which the earth's crust became fitted to produce the chemical conditions which render the evolutions of organisms possible, but we cannot describe the commonest chemical changes going on every moment of our lives in our own bodies. We assume to fix the periods of the earliest geological transformations, but we cannot define the simplest of the vital processes. In the words of the chemist Bertholet, "We know nothing of any one of them thoroughly, since a perfect knowledge of any one involves the perfect knowledge of all the laws and all the forces which combine to produce it; in other words, a perfect knowledge of the universe."

The difficulties with which medicine has to deal are not due to the vastness of its included subjects, nor to any doubt as to their basis in science, but to the fact that it is itself a science which is complicated with an art and operating upon one of the obscurest of chemical processes. Nothing can be true in medicine that is not based upon unalterable law, and the law that underlies all therapeutic effort rests upon the maxim that living matter must act definitely in definite conditions. When failures are explained (says Mr. Mill, we believe), they become part of the law to which they were supposed to be an exception. Chances in disease are its variable causes, and there can be no assumption of erratic procedure, only to account for deviations for which no better reason can be given.

While the advance in medicine is in a great measure, but not so absolutely as some of our authors imagine, correlative with the general advance in science, it is by no means so certain that those departments with which medicine is the most closely connected are marching with the rapidity and precision of others with which we can claim no immediate relations. In the discussions of vital theories, which surely is where general science impinges most undeniably upon our pre-emptive domain, we find little else than opposed and controverted theories, with

mere fancies more or less whimsical, and dogmas in every stage of assertion and rebuttal. Chemistry, on the contrary, till quite recently exclusively analytical, has just entered upon a new career of combinations; and as there are really no limits to the possibilities of synthesis, we can follow it no further than the threshold, and must henceforth gaze upon its progress from afar, content with what our pharmacist shall distil from it, and grateful for what the chemical physiologist shall give us (and take back again) from year to year. But apart from all lofty connections and in its own career, medicine, while stationary with all learning for many centuries, is now fairly abreast of its tributary sciences, while as a practical art it lays under contribution the highest developments of all other arts.

As the physician can never more hope to comprehend more than an insignificant portion of any one of the allied sciences, it is consolatory to feel that in limiting the conception of professional duty and requirements to the single department of clinical medicine, the pure medical scientist of the future will be a far superior intellectual resultant to the quasi-universal sciolist of the past. For, as Sir William Gull says, "if it were possible to conjoin in one human intelligence all that is now known of all other sciences, such knowledge would be compatible with entire ignorance of clinical medicine." And bringing the subject into these narrow limits which we intend to claim as the only proper sphere of the medicine of the day, as the phenomena of living tissues are not explained by their chemical composition, so the phenomena of disease are not explained by the knowledge of healthy tissues or by the action of healthy organs. There are problems to which we are not bound to give a scientific solution, but which involve an action within the resources of art. We find ourselves surrounded by ailments and suffering, and in the main we know how to relieve them. The outcome of our knowledge is not philosophical contemplation, but it *is* adaptation and action: we cannot wait for absolute methods, nor shun the contingency of failure. And then we apply our *art*, "leaving physiological questions to the physiologist, and chemical questions to the chemist."

Having thus reduced our conception of medicine to its clinical phases alone, in dissent from the more ambitious flights of

Professor Acland, and having shown, we trust, that while elucidated by, it is not comprehended in the kindred branches of learning, we propose, before commencing the special subjects included in our general purpose, to point out a few changes in the broader ways of medical thinking.

In uniform conditions of human life, individuals are mainly alike, and are equally susceptible to physical ailments of whatever origin. Their occupations are the same, their food at given seasons is the same. Among savage nations, therefore, as the type of an identity of condition, we are not surprised to find whole tribes or communities carried off by a general epidemic, or by a single disease, like leprosy, plague, or small-pox. From the diversity of conditions in civilized life, on the contrary, there arises an immense variety of ailments to be studied. The diagnosis of these ailments, or the art of distinguishing a given one from all others, rests upon the basis of knowing the sum of the possible in morbid processes. But what is exhaustive in the pathology of to-day may be very far behindhand to-morrow. For while the whole subject of morbid anatomy is said to have been studied out to its ultimate, to be in fact an exhausted mine, such a conception of it must only turn, we fancy, upon whether its phenomena are now to be ranged as causes or as resultants. And next to the possible in disease come the second elements in the probable, as learned from the largest and most varied experience.

Our danger will always lie in deviating from our own narrow but trustworthy path, and wandering away into the tempting fields of physical or chemical analogy. Yielding to external importunity, we are induced at one time to look upon the human body as a sort of undeveloped galvanic battery, and at another we fancy it to be simply an animated oxidizer, and that all our ailments arise from defects in its machinery or obstructions in its chemical processes. Not very long ago the microscope seemed likely to disintegrate all large conception of clinical phenomena, and to tie us down to what Nelaton called the beetle-eyed habit of observation. Nor should we leave out of the reckoning a method of studying disease by columns and averages, calling itself in its short-lived day the "Numerical System," and which never, as it pretended to do, at any time replaced

opinions by facts, but which really retarded the scientific induction and philosophical study which are the characteristics and the pride of the present day. Its labors were wasted in mere counting-house puerilities with disjointed and irrelevant details, and for years some of the foremost men in France and America, but never, we believe, in Germany or England, found no better occupation for their faculties than the inconsequent tabulations and the fatuous arithmetic of this happily effete substitute for medical observation.

Modern medicine inclines to regard diseases no longer as distinct entities, but rather as perverted life-processes with their proper access, culmination, and decline, requiring only time and rest for their completion; and it is not by setting up distinct conceptions in opposition to the standards of health that these processes are best to be studied. Perverted functions must be attributed to failure of action, not to excess of it, and we are to watch the very first deviations and shortcomings from the condition of health itself. Organic strength is now known to exist in full nutrition and in healthy function only, never in their perversions. But we are still hampered by the old nomenclature, and with the clearest conceptions we cannot always avoid confusion and apparent contradictions. The terms "sthenic" and "asthenic" are relics of the old "phlogiston" which itself still survives in the expression "anti-phlogistic." *Strength* and *weakness* are descriptions of no value in semeiology; they are deduced from subjective and only superficial phenomena. The quickened pulse, the acute delirium, the burning fever, all once supposed to indicate a preternatural strength, are but the tokens of a deficient balance-power, and heat itself has come to be the surest measure of organic waste.

The terms "zymosis" and "zymotic disease" have for a long time held a position in medicine for which no valid reason can be given. There is really no clinical condition which we can intelligibly or with any propriety define as *fermentation*. The specific tokens of a fever are to be found in its attendant tissue-changes, not in the multiplication of hypothetical organisms. "Zymosis" in classification is the superfluous survivor of the old scholasticism which generally explained the obscure by something that was still more obscure.

In every part of the body are developed proclivities to some special morbid action, with its appropriate mode of repair, whose course of life is as natural as that of the tissues from which it springs. We may take as the type the plastic lymph which helps on the resolution of the inflammations of the lungs, of the heart, and of their investing membranes. Knowing these intrinsic tendencies, we trace back the morbid action to its sources, and are prepared for its coming results. The brain also, without apparent cause, is liable in the adult to the formation of tumors, and in the young to insidious softening; from certain external phenomena we are led to suspect these conditions, finding a meaning in elements once entirely overlooked; and mere symptoms have come to be of little value in any diseases of the brain. Studying them only from books, we read of the most diverse affections presenting identical symptoms, and the most extensive lesions developing no symptoms at all; while in their pathological study the whole catalogue of symptoms may have one after the other appeared, and not the trace of disease have been left.

Certain textures are prone to morbid action, while others are almost sure to be free from it. Portions of a single continuous tissue have the same liability or exemption, and why, we cannot say; but knowing the fact, we may distinguish with certainty the structures of the parts affected. We recognize analogies between the infantile and the senile affections, as different and as like as "the tints of the rising and of the setting sun." Special forms of convulsions, of abdominal pains, of skin diseases, of uric-acid deposits, are common to both periods, and reveal alike the failing power of degenerating tissues in age, and inadequacy of power in the growing tissues of infancy.

A number of very common acute disorders are now believed to be secondary to latent chronic lesions, or dependent upon distinct degenerations, the potential lesion of causation being unnoticed in the storm of symptoms it has excited. Some of the acute inflammations within the abdomen and the encephalon are only the ultimates of a morbid process of many years' duration, and a disease, long regarded as local, turns out to be not the sole or immediate cause of death, or even the most important change. And we now comprehend, as never before, the old

Hippocratic axiom, "Diseases do not fall upon men instantaneously, but being collected by slow degrees explode with accumulated force." These unquestioned facts of the changed relations of acute and chronic disease, like all reversals of long established opinions, are in danger of leading to the opposite extreme, and Sir William Gull especially seems to entertain the conviction that acute disease is, upon the whole, more likely to be the result and not the cause of accompanying chronic lesion. Where extreme views of this sort are once fixed, the pathology can always be made to conform to the theory; and as it is very difficult in *post-mortem* inspections to determine with exactness the cause of death, we should be wary lest the scalpel and the microscope give us back only our own *a priori* conceptions. The general belief that chronic conditions are mainly the result of irremediable acute ones is too firmly fixed to be reversed but with the greatest caution.*

* After these passages were prepared for the press, we received from England a copy of the "Medical Press," published in Dublin, of the issue of January 15. Among its contents are the reports of the medical attendants of the late Emperor Napoleon III. upon the causes of his death. It will be remembered, perhaps, that, from its suddenness, this was at first attributed to *embolus* and afterwards to *chloroform*. We shall transcribe the lesions actually found after death. They furnish a striking comment upon the determination with which even a philosophical mind will carry out a preconceived theory, and, as we intimated in the text, make the pathological appearances conform to it. They furnish, in fact, a swift and complete confirmation of the objections we ventured to raise in our criticism of Sir William Gull's opinion as to the relations between acute and chronic disease. That very eminent man could not have desired a better opportunity to illustrate his theory, and it was inevitable that he should avail himself of it. We feel bound, therefore, to reproduce the facts in the case at length; as we had already asserted that any fixed general notion of this kind would be likely to lead to error under circumstances where the fact of priority of condition must be a matter of conjecture mainly.

The autopsy of the Emperor was made by Dr. J. Burdon-Sanderson, in the presence of those whose names are appended to his report. Sir William Gull does not appear to have been present, but he has placed upon record his dissent from the opinions of those who were, upon a single point only, and that point involves the very matter upon which we had taken issue with his theory.

It would seem that an impression prevailed in England that the true nature of the Emperor's complaint had never been detected by his French advisers; and the facts which were developed in the communications this belief elicited prove the long existence of the more potential cause of death, and disprove entirely the assumption upon which Sir William founds his non-concurrence; while they also show, which is not so much to our purpose, however, that the French faculty were perfectly acquainted with the nature of the case.

There are drawbacks in the medicine of the period. It is inclined to neglect the broader study of general diseases for the closer methods in diagnosis alone, and to assure it by ingenious aids. Its exclusive study of small portions of the body limits the mind to a localized pathology. It is even to the disadvantage of skilled auscultation that it diverts attention from the more general cause which has induced the local affection; and, finally, it is only the local or special diseases that are now considered fit subjects for monographs.

On the whole, the more careful study of morbid processes has resulted in the isolation, not only of the individual, but of the separate life of his special organs and tissues; of which the natural and fortunate consequence is a method of treatment ap-

---

"The most important result of the examination was, that the kidneys were found to be involved in the inflammatory effects produced by the irritation of the vesical calculus (which must have been in the bladder several years) to a degree which was not suspected; and, if it had been supposed, could not have been ascertained. Death took place by failure of the circulation, and was attributed to the general constitutional state of the patient. The disease of the kidneys was of such a nature and so far advanced, that it would in any case have shortly determined a fatal result.

"Signed by all present:—

"J. Burdon-Sanderson, M. D.
Dr. Conneau.
" Le Baron Corvisart.
Henry Thompson.
J. T. Clover.
John Foster.

"Camden Place, Chislehurst, January 10, 1873, 6.30 P. M."

Sir William Gull records a separate opinion on one point only, namely, the origin of the calculus, in the following terms:—

"I desire to express the opinion that the phosphate of lime calculus which formed the nucleus of the mass was the *result* of the prior cystitis, not the cause of it. This nucleus was of uncertain duration, and may even have been more recent than supposed in the appended report." "It seems, to my judgment, more in accordance with clinical experience to regard the cystitis [inflammation of the bladder] as the *prior* lesion, and that this by extension, as is common in such cases, affected subsequently the ureters and pelvis of the kidneys. No doubt in the later stages of the malady the calculus by its formation and increase was an augmenting cause of the lesions." (The italics are ours.)

Now, as we learn from the *Union Médicale*, "On July 1, 1870, the Emperor Napoleon feeling very ill, a consultation took place between Doctors Nelaton, Ricord, Fauvel, Corvisart, and See. Their diagnosis was that of stone, and an immediate operation was recommended." But from *political considerations* "the disease was allowed to go on augmenting for two years and a half." As the "Press" remarks, "the report is in strict accordance with clinical experience, and, what is more to the point, with the *clinical history of the case itself.*"

plied to the individual, and not to the name we may have to give to his complaint. His own life constitutes the individual, and all the alterations of that life, therefore, are individual and not general. One person dies in an epidemic, and another recovers, from causes peculiar to these individuals. Only to the charlatan is disease a congeries of symptoms, for every one of which its special drug has been catalogued.

Certain abnormal conditions have now ceased to be regarded as diseases. Mere "ailing" is as natural a process in advancing age as health. "The Diseases of Advanced Life," so ably treated by Dr. Machlachlan, who studied them among the Greenwich pensioners in his charge, might more properly, we fancy, be entitled "The Natural History of Old Age." The natural changes of age only simulate the diseases of a younger period, and even well-marked special diseases once fastened irremediably upon the system lose their distinctive characteristics and become merged in general decay; and this view has been recently corroborated most strikingly by the facts developed in relation to a recent discovery at Vienna.

The now well-known tendency of renal disease and its consequent ill-nutrition to induce chronic or sub-acute inflammations in the encephalon, we can allude to more conveniently in another section of this article.

A great variety of related phenomena from a single cause, varied by individual tendencies, were formerly classed as half a dozen different diseases. The term epilepsy once denoted a special morbid state with convulsions and unconsciousness. We see in it now a condition of disturbed molecular nerve force, such as is likely to occur in any other aggregate of molecules, in which may occur not only the common phenomena of epilepsy, but coma without convulsions, paralysis following convulsions, sudden and transient mania, and peculiar forms of neuralgia; we must therefore cease to give reality to such an affection apart from its phenomena.

Among the new connections in which old symptoms appear, there are two which deserve special mention as trophies of more minute exactness in study, namely, embolus and locomotor ataxia. To Virchow of Berlin we are indebted for a pathological discovery which has cleared up many obscurities.

Minute doses of fibrine, or coagula of blood, called *thrombi*, become detached from the chambers or valves of the heart, travelling either in small particles or in masses to the smaller arteries, or they may course along the veins back to the heart. To the coagulation of blood in the living vessels, starting from the fact that arrested blood coagulates at the temperature of the body, 98° F., Virchow has developed his theory of the "inflammations of veins" as it was before regarded, and explains many results formerly attributed to "palsy of the heart," "retrocession of gout," "metastasis," "sudden death," etc. To the formation of clot Virchow gave the name of *thrombosis*. The projection onwards of the clot or thrombus along the vascular system is called embolism, and the whole series of actions is now known specifically as embolus. From this discovery, as it may almost be called, many things before involved in mystery are brought to light and arrange themselves in definite order, enabling us to anticipate the occurrence of other results, and to prevent them.

The *ataxie locomotrice*, first described by Dr. Duchenne of Boulogne, is the result of a degeneration of the posterior columns of the cord which, after all the discussion, is the main and distinctive seat. Dr. Baillie, however, had proximated the matter in his description of a sort of "paraplegia, from excessive morbid secretion of the cerebro-spinal fluid, which in the erect posture gravitates to the lower part of the sheath" and pressing upon the cord embarrasses the co-ordination of movements. The isolation of the motor columns in this affection harmonizes with an old physiological notion, that these parts had their own vitality and a separate function, being mere commissures or connecting bands: textures limited to such a function may have a lower vitality than others whose functions are more essential, and at the same time a greater tendency to disease than those of higher vitality.

Having stated much that has been learned of late, let us confess to a little ignorance and to a few wants. We do *not* know why it is that in the two poisons, cholera and diphtheria, both developed on mucous surfaces from the blood, all the salines and water are poured out in the one, and a fatal effusion of fibrine takes place in the other. The cattle plague and

the horse disease are as far removed as possible beyond the reach of cognition or prevention. Do what we will, epidemics must always be anticipated in some form or other, and hygiene can never replace therapeutics. Finally, we are sadly in want of simple and ready means to recognize chemically the urinary morbid products as easily as we now detect sugar and albumen. They are largely connected with changes in health and disease, and chemistry still owes such methods to medicine.

The Sphygmograph. — Our purpose requires no comment upon the pulse. Well studied by the ancients, during the Middle Ages any reliance upon it was generally regarded as a superstition in the category of astrology; "it was doubted if its varieties, as described by Galen, could really be observed or understood." The pulse, however, will always be recognized as the unerring index of a function whose continuance is essential to life. Not only must the heart not cease its action for a single moment, but we are suspicious of the slightest token that it wearies or faints at its work, for the issues of its halting are the issues of life and death. Apart from its immediate connection with the special disorders of this great centre, the pulse has not lost its position as chief among the methods of finding out the working of every portion of our physical machinery. The sense of touch, however, is not only deceptive, but it cannot be taught; no teacher can ever impart to his pupil the experience or knowledge that his own well-educated finger derives from the pulse. The sense of sight, therefore, is not only a much more reliable guide in itself, but it is a far better medium for description and instruction.

Galileo was the first to conceive the idea of recording accurately and visibly the characters of the pulse, and he constructed for the purpose what he called a *pulsilogia*, which made no impression in its day and left no trace but its name. Vierordt invented a sphygmograph, but it was full of fallacies and of no clinical value. The name of Marey is now exclusively associated with the modern instrument which is made to register the pulse-shock and the wave of the blood column along the arteries.

The sphygmograph is essentially an arrangement of levers

by which the wave as transmitted is increased in apparent size, or rather exaggerated in action, by movements similar to those of a small upon a larger wheel. An ivory pad rests upon the artery, usually that at the wrist, the rush of blood along the vessel lifting the pad perceptibly even to the eye. But however slight the movement, it is sufficiently exaggerated by the levers to procure a distinct tracing of its normal outline and of its every variation. The impulse received by the ivory is transmitted by a long slip of light and flexible wood, at the opposite or free extremity of which is affixed a fine steel point, which we will call the *stylus*. By a secondary arrangement, a slide, placed at a right angle with the lever and in contact with the stylus, is made to move by mechanical appliances from right to left across its point, so as to give when in motion, to the liftings of the pad and to the movements of the lever and of the stylus, the effect of tracings in free running hand from left to right. The rate at which the slide moves is made to correspond with the time required by each pulse-wave to effect distinctly the whole of its individual tracing, that is, the rate of about four inches in ten seconds. At this rate of speed, each impulse occupies about four tenths of an inch in space upon the slide, and we here premise that the spaces and lengths to be spoken of assume a healthy pulse, without pressure and with the motion of the slide graduated to this rate. We may also state that the instrument as it was left by Marey, like most mechanical appliances requiring practice and skill in manipulation as well as judgment in induction, has usually sunk out of sight as fast as introduced. It had faults and imperfections which speedily destroyed its reputation for reliability, and at last it came to be scarcely mentioned even in medical textbooks. In fact, it had dropped into what seemed to be its natural place as simply a physiological curiosity. The monographs upon its uses, especially that by Dr. Burdon-Sanderson, are more in the nature of scientific treatises than adequate guides to its clinical use.

These considerations were probably what induced Mr. Mahomed, a student of Guy's Hospital, to commence an extended and exclusive study of the subject, and by his improvements in the instrument, accommodating its movements to the feeblest

pulse, and with the advantages of a nearly perfect mechanism, he has been enabled to present, not only a new method, but a new literature of the sphygmograph.

Although a pen actually dipped in ink may be made to do sphygmographic writing upon white paper, the best register is a tracing by the steel point upon smoked paper made portable and permanent by varnish. And if the reader will now attempt to form a mental picture as he goes along with us, we will endeavor to clear up the mystery of the sphygmograph as intelligibly as it can be done without diagrams, at least to give some conception of the simple process by which the heart is made to write out a description of its own ailments at the end of a telegraphic wire a thousand miles away.

The first impulse imparted to the pad by the artery sends the stylus suddenly upwards on the smoked paper, scratching a straight line of about half an inch or less in vertical height. This first up-stroke is called the percussion stroke, and proceeds from the shock received by the blood-column as a solid body, on the bursting open of the aortic valves as the blood leaves the heart for the general circulation,—a shock communicated almost instantaneously to the whole arterial system. In the normal condition this stroke is distinct from the true pulse-wave; if confused or identical with it, it becomes a sign of disease. It is the index of a healthy suddenness and force of the heart's contraction, and measures its muscular strength or weakness in acute disease, but it is not a guide as to the relative amount of blood forced into the aorta for distribution. After marking the percussion stroke, the stylus next drops about a tenth of an inch, at a slight distance away from the vertical line and making a very acute angle with it, and its descent is cut short at this point, and sometimes pushed slightly up again, by the distension of the artery by the true tidal wave. Its next fall forms a curve with the concavity downwards. Up to this point the whole tracing is called the percussion wave, from the starting-point of the percussion stroke to the end of the first curve; and the space between the vertical line and the next regular ascent of the stylus measures the time elapsing between the opening of the aortic valves and the arrival at the wrist (of the tidal impulse). Next follows the

second up-stroke and fall of about half the height of the vertical line, whose force and comparative height measure the amount of blood forced into the arteries; and the degree of pressure, usually about twenty pounds, required to extinguish it, shows the actual propulsive force of the heart's contraction, a much slighter pressure being sufficient to efface the percussion wave. We are now about half-way over the inter-vertical space, as we may call it. The next motion traces a curve with its concavity upward, and the notch from which it starts is called the aortic notch, and the impulse ends with the closure of the aortic valves. The second elevation is due to arterial expansion, and the whole stroke ends with a gradual fall of the stylus to the base line corresponding with the collapse of the artery. This base line, drawn through the bottoms of all the vertical lines, Marey's *ligne d'ensemble*, is curved, with its convexity upward on forced expiration, and conversely, on forced inspiration, it forms a downward curve, and might be called the respiratory line. The whole pulse, then, is divided into two parts, corresponding with the contraction and the dilatation of the chambers of the heart; and we are now prepared to see what the deviations from these normal characteristics indicate, as derived from a few simple inductions.

First, the graduated amount of pressure required to efface the tidal wave shows a hard or a soft pulse. Secondly, the verticality of the percussion stroke and its proportion to the tidal wave show a slow and feeble or a sharp and strong heart action. Thirdly, the height of the tidal stroke shows the amount of blood expelled from the ventricles. Fourthly, the degree of convexity of the succeeding curve indicates the amount of obstruction to the arterial collapse from any cause. Fifthly, the dicrotic ascent or rebound indicates disturbed relations between the heart's contraction and the arterial tension. Sixthly, the spaces indicate the relative duration between contraction and dilatation; and seventhly, the convexities of the *lignes d'ensemble* show the effect of the act of respiration upon the pulse.

The pulse of every individual is as characteristic of him as his intonations or carriage, and we do not doubt but that the sphygmograph might sometimes settle questions of personal

identity; but in disease the pulse loses this individuality, and varies with the general circulation. The sphygmograph has differentiated between diseased conditions of the brain, which even the ophthalmoscope had left in doubt. But it should not be forgotten that its action is circumscribed and its value limited. It is the index of the vital and dynamical condition of the circulation alone. We have only to add that tracings can be taken from the apex-beat of the heart, when they are called cardiographs; they are wanting in the finer details we have above specified.

The Ophthalmoscope. — What we have to say of the ophthalmoscope will be limited to its uses in general diseases; with its employment by the specialists in the examination of local affections we have nothing to do. Nor is it necessary to describe the well-known little mirror which is a part of the programme in the visit to the "ophthalmic surgeon." Invented by Helmholtz, but brought into its present use and nearly perfected by Liebreich, it certainly has worked a revolution in ophthalmic science. It may not be superfluous, however, to remark, that the instrument in question is primarily a concave reflecting mirror with a perforation in its centre, which catches the rays from a light placed by the side of the patient's head, and throws them back to the bottom or *fundus* of the eye, which is itself a part of the magnifying power. Any transparent reflecting body is an ophthalmoscope, and with an ordinary lamp sufficient light is returned from the concavity of an ordinary watch-glass to exhibit all the details at the back of the eye; and it is said that it possesses the advantages of not requiring dilatation of the pupil by atropia. We do not believe, however, in simplifying or extemporizing processes in so important a matter as diagnosis of optic changes. The most perfect instruments and skilled manipulation, with every accessory to facilitate the examination, should be made use of, nor should our own judgment be trusted till after long practice and many comparisons.

The specialists Graefe and Liebreich were the first to observe the effect of constitutional lesions in the structure of the eye; and although great progress has been made in their study by

both French and English physicians, the first English classic on the subject is but hot from the press, — the beautiful volume by Dr. Allbutt. Ophthalmoscopy has been for years gaining ground in medicine entirely distinct from its specialistic utility. But a short time ago an eminent London physician said to the author, "It is nonsense to pretend to localize diseases within the encephalon; ingenious guesses you may make, but such guesses seldom prove to be worth much in the dead-house."

Clinical observation in this direction has been stimulated by the great advance in our knowledge of the morbid and the minute anatomy of the central nervous system. The brain is so complex and inaccessible an organ that it has kept out of the reach of the rigorous analysis which has of late changed the whole aspect of medicine. The inspection of its actual morbid processes will go far to disperse those transcendental habits of thought which, driven from every other position, still have their foothold in the brain, and to establish the fact that as its functions are only the movements and relations of its tissues, so the diseases of the encephalon can only be the abnormal action of its component parts.

Disturbed vision or absolute loss of it has always been known as an attendant upon diseases of the brain. Soon after Bright's discovery of the connection between albuminuria and renal disease, amaurosis was noticed as an occasional symptom of the new disease. The ophthalmoscope discloses not only the mode by which sight is thus affected, but that very process itself makes important revelations as to the remote cause residing in the kidneys. It not only tells what we could not otherwise know, but it is sometimes the only solution of a difficult problem, and in distinguishing and foretelling results its value is immediate and irreplaceable.

But it must not be forgotten that the use of the ophthalmoscope in general medicine is limited to that state of the intracranial circulation shown in the vascular system of the optic nerve and retina; nor is it infallible here. As we have intimated, the interpretation of phenomena by it is not easy, and the absence of change in the retina may coexist with abnormal cerebral circulation.

The indication of cerebral disease through the optic nerve is due to its great vascularity, its large share of connective tissue, and its contiguity with the parts at the base of the brain. The nerve and the retina are independent of each other in their vascular supply; the central artery and vein of the retina lie among the fibres of the nerve, but distribute no branches to it. But in the optic disk, which is the great centre of observation, a network of vessels connects together the nerve and retinal arteries, etc. The disk therefore is closely connected with the cerebral vascular system, and is the best index of its condition and disturbances. An inflamed or congested optic nerve may be watched from hour to hour, and false conclusions be avoided, even if the cause cannot always be known and located, and its nature, often more important than its seat, be ascertained. Before the connection between changes at the back of the eye and the effect of intra-cranial blood pressure upon vision were known, the utmost confusion prevailed as to the cause of the disturbance. At one time a tumor would be found pressing upon the optic nerve or ganglia; at another identical phenomena would occur without tumor, and the sympathetic system, the original sin of baffled nerve science, would be suggested as the offender. The most careful clinical observers are still in doubt as to the actual value of optic changes in the diagnosis of tumor, though Dr. Allbutt avers that nothing is more certain than that "intra-cranial tumors commonly give rise to changes in the optic disk." Without entering into any discussion of disputed points, we propose, in accordance with our plan, to state a few illustrations of the clinical uses of the ophthalmoscope.

The "choked disk," *ischæmia*, is due chiefly to such causes as distention of the ophthalmic veins, inflammation of the brain membranes, hydrocephalus (the affections of youth), and tumors; conversely, acute and chronic softening, hemorrhage, hardening and arterial degeneration (the affections of age), do *not* cause it. The appearance called neuro-retinitis is an extension of inflammation from the brain, especially if its seat be near the optic tracts. What seems remarkable is, that no inferences can be made as to the state of the optic disk from degrees of vision. Choked disk, nerve inflammation, and

advanced atrophy may all exist without any affection of sight, without pain, and without sensitiveness to light.

The study of some particular affection will give a better insight into the value of the instrument in general diseases than any other course, and we will take for this purpose epilepsy. Between the paroxysms of epilepsy, the optic disk is observed to be of a deeper red, the vessels are larger than normal; during the convulsions the disk is of a pinkish color, the arteries are small, the veins large; after the fit the disk is pale, the arteries small, and the veins are unchanged. As consciousness returns, the disk becomes of a deeper red, the arteries are larger, and the usual retinal appearances return. The stage of stupor indicates a general condition of anæmia. These appearances confirm the present theory that epilepsy is due to anæmia, and not to congestion of the cerebral vessels. If maniacal excitement follows the fit, there is even more congestion. The degree of congestion is in direct ratio to the number of fits and their severity. Now when the fits are reduced in number by bromide, the congestion is lessened; but if the fits recur with their former frequency, the congestion returns. It is inferred therefore that the reduction of congestion is not due to the immediate and direct action of the bromide on the blood-vessels, but is due to the absolute reduction in the number of the fits, possibly through some other action of the bromide, which loses its power to control the morbid tendency after the constant vascular disturbance caused by the fits has led to marked passive congestion, but frequently controls it when congestion is not so far advanced. We thus arrive at a modification of the general belief as to the action of bromide absolutely, and at some knowledge whether it is likely to be of benefit in a given case.

In renal disease the most conspicuous change is retinitis, with subsequent degenerations of and about the disk, so characteristic as to be at once recognized as due to albuminuria; not confined to any one form of renal disease, but most common with contracted granular kidney. It is believed that these initiative changes in the retina are set up originally by uræmic poisoning. The mirror reveals two classes of eye-affection, those due to uræmia, which are sudden and temporary, and more gradual impairments arising from visual degeneration.

Spinal disease, if chronic or if slow in access, is detected by optic changes. If it arise from injury, the higher its seat the sooner the after-changes appear. These changes are, first, simple primary atrophy, which is *never* the result of injury, but is common in chronic degeneration of the cord and in *locomotor ataxia*. Secondly, indistinguishable retinal arteries with swollen, dark, and tortuous veins; the disk red, its borders lost; these are seen only in injury, never in degeneration or ataxia.

As new instruments of precision open new avenues to knowledge, so an improved method stimulates research, and the mind itself is invigorated by the new opportunities, and from habits of accurate and industrious observation comes that intimate knowledge which is founded upon facts, however they may oppose tradition.

The Thermometer in Disease. — In 1754, Antonius de Haën, the first known teacher of clinical medicine in the Hospital of Vienna, taught his pupils to ascertain the temperature of the body in fevers according to the measurements of the thermometer, and not through the impressions received by the hand. It had not escaped notice, even at that period, that in the cold stage of ague, with chattering teeth and shivering skin, pallid and cold from contraction of its blood-vessels, the temperature of the body beneath was rapidly rising, and even with the rude instruments of the period the increase of heat could be accurately measured. The hand of the physician and the feelings of the patient are alike fallacious and unsatisfactory.

The instrument of precision now exclusively used in observations of animal temperature is a sensitive mercurial thermometer, graded between 85° and 115° Fahrenheit, self-registering, and measuring with fifths or even tenths of a degree. As a rule, the temperature is taken at the armpit, the skin being folded over so as entirely to cover the bulb, at different periods both of the day and night, and the daily changes are accurately noted on the proper thermometer charts. We must start from the normal standard of fluctuations within the limits of health, and with the correlations of animal heat with the pulse and respiration.

The normal heat of sheltered portions of the human body is 98°; and a rising above 99°.5, and a depression below 97°.3, if persistent, are certain signs that disease of some definite type is present, or, as we should express it, some special deviation from health. But there have long been on record observations on normal temperature under variable circumstances within the limits of health: those communicated by Sir John Davy to the Royal Society disclose the following facts: —

In temperate climates the *maximum* temperature is in the early morning; after waking it fluctuates till nightfall, and is lowest about midnight, but the average difference is less than one degree (0°.82). In tropical regions the *minimum* is in the early morning; after waking it fluctuates, and is highest during the day. Davy also observed that "an undue degree of elevation was some criterion of the intensity of diseased action."

Animal heat is affected by a great variety of collateral circumstances, but the great distinction between the variations of health and those of disease is, that the first are temporary and within narrow limits, amounting to mere fractions of a degree; those of disease are of much greater extent, and persist during the continuance of such disease. Besides changes due to physical exertion, atmospheric changes, etc., it is ascertained that sustained mental exertion depresses heat half a degree; that after a full meal or the use of alcohol, heat is at first reduced, as digestion advances the temperature rises; that the average temperature in the tropics is one degree higher than in temperate zones; that the temperature is more sensitive and more readily and rapidly affected than either the pulse or the respiration, especially in disease. The degree of abnormal increase of heat is usually in proportion to an increased frequency of the pulse (about one degree to ten pulsations), and is in direct ratio to the severity of other general signs of disease; and where disproportion or incongruity exists between the heat and the pulse, or other febrile phenomena, as sometimes happens, the accurate measurement of the temperature is the most to be relied upon. The maintenance of the temperature within its known normal limits is a complete assurance that any disturbance shown by other clinical indications

must be local and unimportant; and in military practice it discloses whether disease is feigned or real.

The conditions in which the thermometer serves a purpose which no other means can attain, are fever and tissue-waste. The essential element in fever is preternatural heat. Our knowledge of the natural history of febrile diseases has reached great exactitude and certainty during the past few years, but heat, after all, is the important feature. Whatever other theories have prevailed during twenty centuries, heat bears the same relation to fever as in the time of Galen. It is never absent; without it fever cannot exist. Rigors and chills are mere external phenomena; the sensations of heat and cold are subjective impressions due to the special condition of the peripheral nerves, not to any absolute condition of the temperature; and conversely, while the skin may be ice-cold to a bystander, the patient may feel that he is burning up within.

Some of the most exact and useful observations were made long ago in our own country by Dr. Joseph Jones, late Surgeon-General of the Confederate forces; but beyond everything in the way of recorded observations are those of Wunderlich, the Leipzig professor, whose book, translated by the New Sydenham Society, contains the record of half a million of exact thermometric observations, following the continuous process of nearly every human form of disease, and comparing the results from more than five thousand patients. Among them are instances where disease was demonstrated by the thermometer before it was possible to detect it through any other means, and sometimes a definite diagnosis was based upon a single observation. Sir John Davy gives a singular instance of rise in temperature where it was impossible to recognize disease by any of the ordinary methods. A lunatic soldier had for many weeks a temperature of 104°. The insane do not suffer from cold and heat like others, and certain organic lesions are apt to occur in them without the usual symptoms. This man made no complaint; his appetite and digestion were good. He died at the end of a month of acute tuberculosis, without any other symptom from first to last than this great and persistent elevation of temperature. There were ulcers in the larynx which

had not affected his voice; there were large cavities in the lungs which had not caused cough; there was ulceration in the intestines without diarrhœa; and various other lesions, all masked and latent.

There is no form of illness characterized by fever which the thermometer cannot accurately distinguish, and recognize the type of; and if it be of an anomalous type, its departure from known types may be defined and described. But its most important use is to mark the daily changes in the condition of the individual affected: the development and progress of his febrile state, its abatement, subsidence, and defervescence, and the approach of local lesions. The term "defervescence" indicates the period during which the temperature of the fevered body is declining from the intense degree of heat which marks the state of accession towards the normal standard; if sudden, the defervescence is called *crisis;* if gradual, *lysis.*

Some of the best established clinical inductions in medical thermometry are as follows: The highest temperatures just before death have been observed in scarlet fever and in lock-jaw. When the temperature goes above 99°.5 we know that the patient is ill from some definite cause; if it rises to from 101° to 105°, febrile phenomena are present with great severity; if it goes above 105°, the patient is in imminent danger; in a range from 106° to 109°, a fatal result is all but certain and is immediately at hand. In any disease, a temperature of 104° or 105° shows that its progress is not checked, and that complications are still possible. The thermometer, therefore, is the best and earliest warning of an additional development of disease, or that some visceral complication has occurred; and if in any accurately distinguished case of disease the temperature departs from its normal and typical range for that disease, we are to anticipate trouble. As convalescence only commences when the disease process ends, we know that it cannot occur till the normal temperature returns and maintains itself through all periods of the day and night, and during convalescence any considerable fall of the thermometer foreshadows collapse.

The morbid development of heat is sometimes associated with more, sometimes with less, abundant bodily excreta than

in health. The temperature and the amount of the excretions bear certain as yet undetermined relations to each other. The loss of weight in a patient is due to an increased and rapid elimination of material with increased tissue changes, and is associated with increase of temperature, — more certainly as regards urea than with the other excretions; whence it is concluded that heat is attended with increased elimination of urea, and therefore with greater tissue change. While the product of metamorphosis, as determined by the excreta, may be diminished in fever, there may still be increased metamorphosis with less elimination. Finally the pulse, the respiration, and the temperature, each and all, represent forces at work within the living body which can be measured with great exactness, and such measurements show how closely the expenditure of forces is related to the excreta which represent the waste of tissue in health and in disease; show, also, the decline in that nervous control that regulates the functions in health: that is, in the force that limits the working of all other forces.

Localized electricity, or electrization, as it is commonly called, is now conceded to be a most powerful agent in the treatment of disease; but, to borrow the language of Dr. Russell Reynolds, "it is useful, useless, or mischievous, according to the manner in which it is applied"; and although the greater part of what we have to say about it will be as a mode of treatment, it is introduced here by virtue of the rank it has just begun to take as a most profound and scientific method of diagnosis.

The term "electrization" is generic, and should never be otherwise employed. It is common in medicine to restrict electric effects to the three varieties, of friction, of contact, and of induction. Frictional electricity, which Faraday himself called the Franklinic, is also known as "static"; while the two other forms are confounded under the common name of "dynamic." A primitive form of the static was the now obsolete electric bath, or the immersion of the feet in buckets filled with electric eels; the only forms of its present application are through sparks, or by means of shocks from the Leyden jar, or by insulation upon the glass stool, when the patient is charged

like a prime conductor. Static electrization, however, may be regarded as practically in disuse, the milder forms having no appreciable tonic effect, and the great "tension" required from the Leyden jar to reach well-covered muscles or deep-seated parts cause such disturbances as render its application difficult, if not impracticable. Curative results, however, have been produced when other modes have failed, by its application to the larynx in obstinate nervous aphonia, than which, as some writer has said, "nothing short of being hanged could be more unpleasant."

Dynamic electricity is employed nearly equally under the two forms of galvanism and Faradisation, and is that variety which is developed by chemical decomposition. Galvanism, or the "interrupted continuous current," is of low intensity in its action on the nerves and muscles; but it produces chemical or "electrolytic" results, as in the coagulation of blood, the mortification of tissues, and a calorific action, which are not to be obtained from the Franklinic or even from the Faradic processes.

Faradism, or the "induced," "magneto-electric," "voltao-magnetic," or "voltao-dynamic" electricity, as it is variously called, is of very high tension, and more like the Franklinic than the galvanic. Its chemical and calorific action are insignificant; it has not the burning and heat of galvanism, but produces marked contraction of the muscles and powerful action on the nerves, both of sensation and of motion. It is induced, but only of momentary duration; and these momentary currents, made by breaking and resuming the galvanic current, are effected so rapidly that a great many of only momentary duration, but of very high tension, pass in both directions in a single second of time.

The question which Dr. Duchenne has undertaken to solve is: Are the physical and therapeutical qualities of the different forms of electrization identical, and can they be indifferently applied? From the time of Remak, whose name is identified with electrization in Germany, very acrimonious discussion has been going on upon this point, and it has never been more bitter than since the late Franco-German war, cropping out in quite a number of French and German prefaces we have

had occasion to look at. The *dictum* of the Regent of the University of Berlin, "that Germany was a contented nation, and coveted nothing beyond its own boundaries," rankles deeply within the bosom of the Gaul. But while in Germany the school of Remak still adheres to galvanism, it is still in France that, in Becquerel and others, Dr. Duchenne finds his most persistent opponents. In England and America both currents are employed: in general practice the Faradic, with specialists the galvanic, more or less exclusively. Dr. Duchenne maintains that the two currents, whose physical action is so dissimilar, ought to produce different therapeutic actions, and each should correspond to special indications.

Electropathy is an art so difficult that slight shades of difference should not be allowed to complicate treatment, and the question mainly is whether any such difference is one of kind or of degree. Practically, it is of degree only; the object is to get electricity in the form most suitable for the emergency. In electro-surgery both currents will avail to disperse tumors, heal ulcers, or hasten absorption. The galvanic is said to be superior to the Faradic in power of overcoming resistance, and it might therefore be expected to act more effectually on the brain, the spinal cord, and the sympathetic nerve, — the anatomical position of these parts requiring considerable resistance to be overcome. It also produces muscular contractions where the Faradic fails; and after a certain amount of treatment by the galvanic current, paralyzed muscles frequently resume their susceptibility to the Faradic. Thirdly, it has a different and more chemical effect for the purposes of cautery, using elements that generate large quantities of electricity, and combining them in a particular way. An ordinary single element, or a large number arranged for intensity, are but feebly electrolytic, and the alleged superiority of galvanism in neuralgia, atrophy, or rheumatism is probably due to the molecular or other tissue changes produced by this chemical action.

On the other hand, Faradism, through its frequent interruptions, produces muscular contractions if applied anywhere over the muscle. While in galvanism one of the electrodes must be placed upon the motor nerve of the muscle, and the

galvanic current requires to be broken to produce effects, the Faradic is already in the condition of constant interruption. But the advantages of Faradization are most marked in general electrization, its powerful tonic effects being largely due to the passive exercise and consequent important tissue changes resulting from the myriads of muscular contractions, while it is less likely to produce unpleasant or injurious effects. Under particular circumstances it is the only one that can be used with benefit or safety.

Dr. Duchenne claims that Faradization is the only therapeutic agent which, limited to the skin, can produce most acute sensations, which cease at once with the operation, and can be graduated from the slightest tickling to the most intense pain, passing through intermediate degrees or going suddenly from one extreme to the other without ever disorganizing the skin or leaving any trace upon its surface beyond a slight erythema or elevation. Such an agent must respond to innumerable indications, from restoring simply lost sensibility to the skin itself to the most powerful revulsion in deep-seated neuralgias. It can be tempered, moreover, to the degree of excitability of any individual, and even of each region of the body; and in the intense current required for certain muscular affections, induction is the only appreciable form. Claiming this, Dr. Duchenne admits that its electrolytic action is too feeble to coagulate the blood in aneurism or to affect the atrophization of morbid growths.

We have considered electrization, so far, in its relations to treatment, and have but little space left to devote to any account of its uses in diagnosis. Its conclusions in this field of study, however, are not universally accepted; in fact, are not very widely known. Professor Acland says, "The exploration of the nervous system by electrical agencies in evidence of chemical alterations and in proof of corresponding changes in the organism (by Dr. Duchenne of Boulogne) shows the certain advance of physical inquiry as applied to disease." It is due to the great reputation, moreover, of Dr. Duchenne to state that he was the first to describe the character and pathology of the progressive paralyses known respectively as, (1.) Progressive muscular atrophy; (2.) Progressive locomotor ataxia;

(3.) Glosso-labio-laryngeal paralysis: all of which types are now well recognized in practice. And in this his third edition, which we have just examined fresh from the press, he adds another morbid condition not hitherto described, but not less fatal in its march and termination, namely, pseudo-hyper-trophic paralysis or myo-sclerosis; also a form of infantile or "obstetrical" paralysis, and an acute and a sub-acute *anterior* spinal paralysis of the adult. These therapeutical researches are the result and aggregate of Dr. Duchenne's indefatigable clinical and pathological studies, most of them having been communicated during the past few years to the different scientific societies of France.

The report on the *action of mercury* by Dr. Hughes Bennett and the committee appointed by the British Medical Association must have greatly astonished the average British practitioner. Although a few medical men now profess to have long been sceptical as to the action of mercury, nothing was ever more generally believed than that it stimulated the biliary secretion. Abernethy's eternal blue-pill is a matter of history, and it was almost the only medicine that Sir Astley Cooper knew anything about. Sir Benjamin Brodie was asked why he always gave blue-pill in certain cases, and could afford to answer, "because he always *had* given it, and it had always been right."

The point for the committee to determine was whether mercury was a chologogue, that is, a bile-stimulant, and these were not the first experiments that had been undertaken to determine the specific action of mercury. Professor Nasse, in 1852, seemed to have ascertained by direct experiment that calomel did increase the absolute quantity of bile, but that it diminished the amount of the solid contents. Holliker and Müller demonstrated that the first dose of mercury increased the quantity of bile, and that subsequent doses diminished it in quantity but increased its consistency. Dr. Mosler investigated in order to determine "what substances introduced into the blood were found afterwards in the bile," and his conclusions were that calomel, in large or in small doses, "does not pass so readily into the bile nor produce the marked increase of the biliary secretion that medical men imagine." Dr. Scott found "a dim-

inution in the amount of bile and bile solids secreted after the administration of large doses of calomel." This was the state of the question in literature.

Dr. Bennett tells us that his committee comprised "the skill of the anatomist, the analytical power of the chemist, and the varied knowledge, theoretical and practical, of the histologist, physiologist, physicist, pathologist, and therapeutist, as well as the physician whose knowledge of diagnosis is unimpeachable." Every instrument, appliance, and chemical, together with a public hospital and the sum of one hundred and twenty-five dollars (!), were placed at the disposal of the committee. At their first meeting, November 16, 1866, the first and, as we think, fundamentally vicious conclusion was arrived at, that no kind of examination of the *dejecta* could yield trustworthy results; supposing that the characteristic constituents of the bile found their way into the alvine evacuations unchanged, "the imperfections in the analytical method (!) render their quantitative analysis impossible," either by Hoppeseyler's method or by the simpler process with alcoholic extracts. (Hoppeseyler, professor at Tübingen, estimated the amount of bile acids from the effect which their solution exhibited upon the ray of polarized light, which Professsor Tyndall's experiments have made comprehensible.) We are to infer, therefore, that neither the bile acids nor the coloring matter were determined or estimated. For an examination of the excreta, they substituted the formation of biliary fistulæ in living animals, and the collection of the amount directly through such fistulæ from the gall-bladder.

The committee admit that, under the action of purgatives, unchanged bile is occasionally discharged from the system; and it is also evident to us, from an inspection of their numerous tables, that the biliary secretion was increased after the first dose of mercury. We observe also that the animal began to *fail* soon after the process of drawing off its bile commenced; that in fact the very organs and tissues experimented upon were on the road to death; that it was not only an animal which was not man, but a wounded and a diseased animal.

From the experiments, however, such as they were, and Dr. Bennett states that they were carefully repeated under every varying circumstance that could be thought of, the following

conclusions were reached: first, that in whatever form or dose, whether continuous moderate doses of blue-pill, minute and frequent doses of calomel, or large doses of it, mercury utterly fails to stimulate the liver. The constitutional action of mercury excited both slowly and rapidly by corrosive sublimate produced the same results. In poisonous doses the bichloride produced a marked diminution in the flow of bile. Mercurial inunction was followed by negative results; and it was regarded as proved that, so far from increasing, mercury, by its general depressing action on the system, actually diminished the amount of bile.

Now we submit that, as depression does lessen the vigor of the secretive process, a much more potential cause for depression is to be found in the condition of the animal from his wounds and the presence of the canula, and from the actual wasting disease engendered by the deprivation of bile, than lies in the giving of a few doses of calomel, which at first, as we have seen, before the constitutional symptoms began, actually increased the flow; and the next conclusions of the report corroborate this idea, for it was found, *secondly*, that abstinence from or considerable diminution of food checked the secretion of bile; and, thirdly, in deprivation of bile, emaciation comes on, the appetite fails, the excretions assume a peculiarly fœtid odor, and death occurs from inanition. Starvation diminishes the secretion, and nothing beyond giving food or supporting health increases it.

Whenever we hear of a *new anæsthetic*, we think of the time when the taking away of pain was to "harden society and rob God of the deep, earnest cries which arise in time of trouble for help," as the Scotch parsons told Sir James Simpson; and when even surgeons argued that "pain was a premonitory condition, no doubt fitting parts the subject of lesion to reparatory action," and that they would therefore "feel averse to its prevention"; when a famous living physician concluded a paper read before a London medical society, "Upon the Injurious Effects of Ether Inhalation," with queries as to "the desirability of removing pain"; when a great American surgeon declared, after some untoward details in giving ether, "that he would never again remain in a room where it was to be given."

After much experimentation for ether substitutes, a substance has been found which will actually manufacture chloroform in the blood, and, what is better, its invention is the result of purely *a priori* considerations. On the second day of June, 1869, Dr. Otto Liebreich, of the Pathological Institute of Berlin, introduced to the Medical Society of that capital what he defined as "a new hypnotic and anæsthetic agent"; this was the hydrate of chloral. Chloral itself was discovered some thirty years ago by Liebig as the product of anhydrous alcohol acted upon by dry chlorine gas, ultimating in a dense oily liquid, colorless, boiling at 210° with a sharp, pungent odor. Mixed with water this becomes the hydrate of chloral, and is converted into a white solid substance. The new agent became at once widely known, and in London Dr. B. W. Richardson, who is constantly experimenting with anæsthetics, was appointed to investigate it and report upon it.

The theory of its action, according to Liebreich, is that the hydrate of chloral, treated with an alkali, is resolved into chloroform, and into a formate which soon disappears; the blood is an alkaline fluid, therefore the hydrate, when it is absorbed, enters the blood, where its particles consume the surrounding alkali, and decomposition is effected after the required amount of alkali has been furnished by the blood. A minimum quantity of chloroform is then instantaneously formed, is set free in the tissues and passes to its first stage of action, the ganglia cells of the brain; as the chloroform increases in amount, its action extends to the spinal ganglia cells, and lastly to those of the heart corresponding with the slowest possible administration of chloroform, and passes out of the system as chloroform. From Liebreich's array of facts also was derived the necessary deduction that the agency at work was chloroform, chemically formed in the blood. There are few now who have not experienced or observed the profound and tranquil sleep produced by chloral; but it is the rival of opium rather than of ether, although it can be administered by inhalation. Besides producing sleep, it removes sensibility, reduces the animal temperature, causes extreme muscular relaxation, practically confirming the theory of its action as chloroform. Its physical action being clearly understood, its applications must be ex-

tremely varied, and in fact it is now employed to relieve almost every known abnormal symptom or condition of body or mind. Dr. Richardson's report concludes with a warm tribute to the "genius and industry of the distinguished Professor of Berlin who has placed in our hands so admirable and scientific a remedy."

With regard to *Cholera*, the novelty is in the treatment alone; its nature is universally understood. A poison is absorbed into and infects the blood, spoiling certain of its constituents, which are ejected through the mucous membrane of the alimentary canal. A primary blood disease is thus produced, undergoing enormous multiplication in the body; and the direct results of the alteration are changes in the function of respiration, while the copious discharges are the efforts of nature to throw off the noxious material, as a necessary process to recovery. From no other cause than a virulent blood poison does a person in full health become in a few minutes, and utterly without warning, shrivelled up, his whole body icy-cold, his face and hands turned purple, while death comes on in a few hours. We cannot refrain from reproducing the quotation very happily brought in by Dr. Aitkin: —

> "Its effect
> Holds such an enmity with blood of man
> That, swift as quicksilver, it courses through
> The natural gates and alleys of the body;
> And, with a sudden vigor, it doth posset
> And curd, like eager droppings into milk,
> The thin and wholesome blood."

The well-known and especial danger in cholera is also its proper and distinctive symptom, characterized by the French pathologists by the term "algide," the sensation and fact of *cold* being one of the most remarkable and constant phenomena; the thermometer in the axilla falling to 92°, more than six degrees below the natural standard in health, while under the tongue it is known to have fallen to 79°. Vomiting, purging, and cramps have long ceased to be regarded as essential phenomena. Hale and hearty men have been suddenly seized, and have collapsed, and died within five minutes, without any evacuation; and death has repeatedly occurred within two or

three hours after access, without any other cause than stagnation of the blood.

Dr. George Johnson, long known to the profession in connection with the correct pathology of kidney diseases, communicated to the Medico-Chirurgical Society of London, in 1868, the doctrine that the poison of cholera was received into the system from without, by inhalation or in food and water, and absorbed into the circulation; that if the vascular excretion was checked, the risk of fatal collapse was greatly increased; and that the object in treatment should be, not to *excite* discharges from the mucous surface, but to facilitate the removal of matters lodged there, and that elimination of the poison from the system was the condition of recovery.

Half a century ago the English physicians in India "aimed to get rid of the offensive morbid secretions" in cholera, but it was quite natural to attribute collapse to the drain of fluid matters from the blood by the profuse and repeated fluxes from the bowels and stomach; and the treatment this view suggested was the "locking-up" plan by opium and astringents and by stimulants. Dr. Johnson's opinions were not well received, and violent controversy grew out of them. It was soon settled that the collapse was not due to the evacuations, but that these were, in fact, eliminative of the poison. To establish relations of cause and effect between them, it should happen that the more profuse the discharge the more decided and certain should be the collapse; while in fact the most hopeless cases were those of scanty evacuations or of none at all. Also the continuance of the discharge should cause a more prolonged, deeper, and more dangerous collapse. But, on the contrary, patients not only emerge from the collapse while the evacuations are going on, but a cessation of them is always a fatal sign. If a vein is opened in cholera, after a moment or so, the dark treacly blood grows brighter, and the patient has been known to cry out that "it had made a new man of him"; therefore collapse has nothing in common with ordinary syncope, which is relieved by stimulants, but would be disastrously affected by blood-letting. Dr. Johnson's own paper in the "Transactions" is immediately followed by another, containing details of treatment upon his plan, on a large scale, in which the re-

sults corroborated the theory, and which demonstrated the remarkable fact that recovery never occurred without a continuance of the discharges or their restoration, if previously arrested.

So great a change in medical opinion was effected by the new views, that Sir Thomas Watson, the president of the society, upon a careful revision, has fully recanted his own published opinions and adopted those of Dr. Johnson in the last edition of his well-known work on the Principles and Practice of Physic, and he pays their author a noble tribute by declaring that "he has by his methodical display of facts, by his close and conclusive reasoning, now triumphantly established his own views of the pathology and treatment of cholera."

Lörstofer's Corpuscles. — During the past few years much attention has been given to the connection between what are called microscopic growths and contagious and infectious diseases. In Professor Stricker's laboratory in Vienna, especially, attempts have been making to explain different diseases, particularly the infectious ones, by the presence of fungous growths in the blood, and in the secretions and excretions, as well as in the tissues of the body, but with hitherto only negative results. In the blood of syphilitic patients especially it was hoped to find traces of a low grade of organism. Could such once be detected, the discovery would not only have a vast specialistic importance, but would give a positive basis to an assumed theory. Dr. Lörstofer conceived that the negative results were due to low magnifying powers, and to the fact that the experiments had all been made with fresh blood in which such bodies may have existed in a state too minute for detection, and that they might *grow* to be visible (this very idea of growth, we may remark in passing, being corollary to the very idea underlying the research), if the specimens could be preserved for examination without destroying the organisms. Lörstofer commenced his experiments in August, 1871; and in January, 1872, at a meeting of the Vienna Medical Society, he announced the discovery of a form of corpuscle peculiar to the blood of syphilitic patients, and through which the diagnosis of syphilis might be made by a microscopic examination of the blood.

In specimens properly prepared, in from one to three days, he averred that certain minute bright corpuscles became visi-

ble, some immovable, others undulating; in a few days more they grew to the size of true blood corpuscles, of irregular shape, with one or more projections. In a few days longer a vacuola was found in the larger corpuscles, which soon extended over the whole body, and terminated the development of the growth, nor could their shrivelling and further retrograde development be arrested; their relations of causation were not asserted.

While Professors Hebra, Skoda, and Stricker indorsed Lörstofer's statement, and affirmed that they had tested it with almost uniform success, others who had long worked without success in the same direction were not satisfied. Wedl pronounced the bodies described to be nothing but fat cells, and declared that they could be seen a few hours after the preparation was made if water were added to the blood; but as Lörstofer's corpuscles do not acquire a visible size till the fourth day, and disappear at once if water is added, it was argued that Wedl *could* not have seen them at all, as he had violated Lörstofer's conditions. Professor Stricker here took up the controversy, and Lörstofer himself seems to have been left out of it. Letters from Vienna to the English and American journals stated that the war speedily became outrageously personal and offensive.

Stricker himself forms no opinion as to their true nature, but pronounces them to be formations hitherto unknown in the blood. Meantime a syphilitic patient in whose blood they had been uncommonly numerous began to show signs of phthisis, which drew attention to another point, namely, the possibility of a general ill-nutrition being concerned in their production, and in fact they were at once found in cases of cancer, of tuberculosis, of Bright's disease, and of anæmia after small-pox. The investigation therefore seems to be sufficiently advanced to pronounce the new organisms not exclusively pathognomonic of syphilis, but as existing in the blood in certain cases of defective nutrition from long-lasting chronic diseases, and more particularly from syphilis. As yet there is no warrant for denying their possible existence in the blood of persons suffering from acute diseases, or even in the blood of comparatively healthy subjects.

We have now completed our task upon a plan kept always in

view; commencing with the general and larger relations of medicine, and showing where it would be better to reduce it in study to its clinical phases alone. We have selected the special subjects which best illustrate the latest or the highest methods in diagnosis, in therapeutics, and in pathology, and which were most likely to lend a uniform coloring to the picture. The medicine of to-day aspires to nothing more, and is content with nothing less, than to be the sum and the harmonization of all that can be gathered from observation and all that can be added by induction. It has sometimes been difficult in the sketch to avoid the appearance of marshalling before the reader a parade of imposing generalities; it was not always easy to escape from tiring him with burdensome details. And the success may lag behind the aspiration. Be that as it may, enough if only he, to whom nothing that is human is foreign, shall any more clearly discern the spirit that controls the science of modern medicine, or any more wisely distinguish the forces that direct its art.

W. O. Johnson, M. D.

Art. II. — Arthur Schopenhauer and his Pessimistic Philosophy.

We often hear people complain of the abstruseness of philosophy, and it may be no fault of theirs if philosophy remains unintelligible to them. But then, there are many other abstruse things, — celestial mechanics, for instance. Yet those who could not understand a single line of Laplace's work never think of denying the truth of mathematics, or the usefulness of astronomical induction, or the legitimacy even of astronomical speculation. This shows at once that the popular dread of philosophy cannot be due to what philosophy has in common with mathematics, namely, an abstruse terminology. Such a superficial difficulty would be as easily overcome in the one case as it is in the other, and the many attempts at popularizing philosophy would have been more successful than they have been if this were the only difficulty. Moreover, there is hardly any science

that has not its peculiar technical terms, its slang, as it were; and it is rather unwise to complain of this, because these terminologies make clear and intelligible, through their terseness, what might be obscure and unintelligible in its verbose paraphrase expressed in popular language. The study of a work on algebra containing no algebraic terms or symbols would be a condign punishment for those who refuse to see this.

There must be a deeper reason why metaphysics are so persistently shunned, while the popularity of scientific pursuits is growing from day to day; and why a lecture, for instance, on the "Nebular Theory" would not fail to attract a large audience, while a lecture on the "Identity of Opposites" would hardly tempt a few curious idlers. The "Nebular Theory" is just as speculative as the "Identity of Opposites"; far more so, in fact, if the degrees of speculativeness may be measured by the number of data or analogies underlying the speculative inference. The difference must, therefore, lie in the credentials which the two lecturers present to their hearers. Both lecturers may be speculative; but while the one is a speculative mathematician, the other is a speculative metaphysician; that is to say, the one is a man known to be accustomed to absolutely true deductions and fairly accurate inductions, while the other is a man notoriously and avowedly fond of certain mental evolutions known to be uncertain in their results, and apt to appear flighty to the looker-on. And it is this appearance of flightiness and this uncertainty of results which account for the diffidence and the scorn with which speculative philosophy is looked upon by the average man of these days.

The phenomenon, then, is explained. But we cannot admit its legitimacy, considering that the shortcomings of philosophy, which are supposed to be its peculiar disabilities, are (notwithstanding appearances and popular beliefs) common to all the sciences, with the single exception of mathematics. Put jurisprudence to the test, and *summum jus* turns out to be *summa injuria*. Put medicine to the test, and *nil nocuisse* turns out to be its principal aim. The same uncertainty of results, the same uncertainty of method, we meet with in that part of the "exact" sciences which refers to the phenomena of organic

nature, — in physiology and organic chemistry, not to speak of philology, geology, and history. And if doctors, no matter which faculty they belong to, are allowed to disagree, if lawyers are in duty bound to disagree, that they may find the truth more easily, and if religion is not given up as hopeless because there are three churches now which claim to be "the Catholic Church," — we have a right to ask, why should not philosophers disagree with the same impunity and on the same plea of finding the truth through its broken rays?

But we must apologize no further for introducing to the reader a man like Schopenhauer, who was not only a great thinker, but also a great writer, and whose literary popularity has opened for his philosophical doctrines a far wider sphere of influence than they would have obtained if Schopenhauer had been, like his rival philosophers, a university professor. The intellectual movement, of which he was the last representative, belongs, no doubt, to the past; but some of his ideas are so closely connected with modern thought and with the many open questions and unsolved problems of our days that they ought not to be overlooked by the present generation of thinkers.

We have but little to say about Schopenhauer's life. He was born in 1788, on the 22d of February, at Dantzic, Prussia. His father was a merchant. His mother, Johanna Schopenhauer, was an authoress whose novels and other writings enjoyed considerable popularity in Germany during the first half of this century; and even his sister Adele had some success as a writer. He passed some years of his boyhood in France and in England, together with his parents. In 1809, he went to Göttingen to study natural history and history, — a strange and characteristic combination of studies. The Professor of Philosophy at that University was G. E. Schulze, who soon recognized the young student's real vocation, and, taking an interest in him, gave him the important advice to confine his preliminary studies to Plato and Kant, and to avoid, above all others, Aristotle and Spinoza. How scrupulously this advice was followed, we shall see by its fruits.

In 1811, Schopenhauer went to Berlin to hear Fichte, in whom he hoped to find a faithful follower of Kant. But Fichte

was not a Kantian, after all, and the disappointed student soon gave him up, resolved, it would seem, to strike out a new and independent path for himself. Driven away from Berlin by the war, in 1813, he went first to Jena, where he obtained his degree, and thence to Weimar, where he became acquainted with two men whose influence can be traced in Schopenhauer's writings as clearly almost as that of Plato and Kant. These two men were Goethe and Friedrich Majer, the Orientalist, who initiated him into the mysteries and beauties of Oriental religions. Schopenhauer was struck with the logical connection existing between Brahmanism and Buddhism, and he recognized in the latter a necessary reaction against the former. Having, at the same time, found out certain analogies between Brahmanism and Christianity, which have in common, if nothing else, an incarnated suffering God, he began to feel the want of something that might be to Christianity what Buddhism was to Brahmanism. These remarks will suffice to explain some features of Schopenhauer's philosophy which might easily be mistaken for poetical or fanciful. If they are either, they are so by accident. They were never intended to serve as ornaments.

From 1814 to 1818, Schopenhauer lived in Dresden, in perfect solitude, and it was during these years of study and retirement that his ideas began to ripen into a full-grown system of philosophy. His principal work, "The World as Will and as Phenomenon," was published in 1819.

But there was no steadiness in Schopenhauer's career. He was, what German philosophers rarely are, a man of independent means. And not only did he make a free use of both his wealth and his independence, but he seems to have felt an uncharitable and inexplicable dislike to all paid and professional philosophers. It is common enough among professional men to feel a certain contempt for wealthy amateurs. But few of the latter have ever reciprocated the feeling as fully as Schopenhauer. "I live for philosophy, not on it!" he used to boast. Let us hope that he was duly grateful to his father.

Notwithstanding his doctoral dissertation of 1813, "On the Fourfold Root of the Principle of Sufficient Reason," and notwithstanding the literary merits of his great work, published in

1819, Schopenhauer remained unknown as a philosopher. Perhaps it was because he was a private *dilettante*, perhaps because he was a novel-writer's son, whose name was hopelessly associated with popular literature, and because his style only enhanced and strengthened that association. Germans do not attach the same importance to style as Frenchmen. Their philosophy is, and certainly was fifty years ago, a goddess of stern features and severe outlines. Why should she ever become a Bayadere for the mere amusement of mortal men?

For many years the world lost sight of Schopenhauer. After a visit to Italy, he went to Berlin in 1820, and established himself as a *Privat-docent* or unpaid lecturer at the University; but his lectures lasted only six months, although he allowed his name to remain on the catalogue for several years. He left Berlin in 1831, soon after the outbreak of the cholera, and went to Frankfort on the Main, where he took up his permanent abode, and where he continued to reside until his death, in 1860.

Having remained in obscurity for seventeen years, and having broken this long silence only by the publication of a Latin treatise "on colors" in 1830, Schopenhauer once more reminded the German public of his existence by publishing, in 1836, a small work, "On Will in Nature." But Germany, it seems, was still too full of Hegel to pay much attention to the charming disquisitions of the novel-writer's son, and the honor of having been the first to recognize his philosophic merits belongs to Norway. The Scientific Association of Drontheim awarded a prize to a new essay of Schopenhauer's, "On the Freedom of the Will," in 1839, and elected him a member of their society. And encouraged by this success, he competed, though unsuccessfully, for another prize which the Royal Society of Copenhagen had offered for the best essay on "The Basis of Morals."

His reputation now began to grow, and, with it, the demand for his books. In 1844 a second edition of his principal work appeared, and in 1851 he published his last and most popular work under the title of "Parerga and Paralipomena."

Schopenhauer continued to lead a very retired life in Frankfort. He never married, and never had many friends. On his long and solitary walks his poodle was his only companion. Only in his old age he associated somewhat more freely with

men; and although he had become an incorrigible pessimist and a decided misanthrope, he was much respected and esteemed by others, and had fewer enemies than gregarious and successful men are apt to have. He was a kind-hearted and charitable, but not an amiable man. Nor can it be said that he was always just and fair-minded as an antagonist, or sufficiently careful in the choice of his polemical expressions.

We now proceed to lay before the reader the outlines of Schopenhauer's philosophy, and willingly engage to be as clear as the subject will permit. Let nobody hesitate to peruse these pages, provided he suffers from nothing worse than want of philosophical knowledge. But to insure the fulfilment of our promise, and to render the desired clearness possible, we beg permission to make some introductory remarks, without which any scientific exposition of Schopenhauer's philosophy would remain either unintelligible or unenjoyable.

Philosophy is the science of knowledge; that is to say, it has to answer the questions: Is there any truth? If there is, is it knowable? In other words: Is human knowledge possible? and if it is, what are its conditions and limitations? what the ultimate *criteria of truth?* The question was raised in the earliest days of Greek philosophy. Heraclitus, a speculative nature, affirmed that he knew everything. Protagoras, the Sophist, said that he knew nothing, except the difference of good and evil. And Socrates, we know, came to the same conclusion as Protagoras.

But the human mind cannot abide, and never does abide, by these results. It may be unable to know anything beyond its own incapacity for knowledge, but it refuses to dwell on this incapacity. It craves certainty, or the appearance of certainty, or the hope of obtaining certainty. And when reduced to Nihilism or to Agnosticism by its own critical powers, it reverts to speculation, or, if it cannot soar so high, to empirical science, where it can indulge in the luxury of floating on the phenomenal surface of things and of seeking comfort in the appearance of absolute certainty. Thus metaphysics and physics are the rightful successors after a reign of scepticism. And Socrates himself began to speculate, as though unable to subsist on the fruits of his own criticism.

If we now follow the long history of philosophic speculation (we will say) from Heraclitus to Leibnitz, we find no material change in the aspirations of philosophers, it being essential to speculation to ignore, and, if necessary, to deny, the limitations of the intellect. Leibnitz still asserted what Heraclitus had asserted twenty-two centuries before him, that he knew everything. But he did not repeat the crude apothegm of the Greek. He said that the mind has potential knowledge, as the seed has potential flowers, and that there were degrees of development and of success dependent on the more or less distorting and obscuring influences of the outer world. That was a great progress. But, unfortunately, truth can be but one, and speculation had, by the end of the seventeenth century, revealed three different truths, represented by Descartes, Spinoza, and Leibnitz. The philosophic world was divided between Dualism, Monism, and Pluralism. A compromise seemed impossible.

Descartes's universe consisted of the *res extensa* and the *res cogitans*. The extended thing was such by virtue of its inherent dimensions, and the thinking thing was such by virtue of its *innate ideas*. But the cause of everything was God, whose *æterna assistentia* produced not only the phenomena in nature, but helped us to all real knowledge and experience, to which the "innate ideas" alone could never help us.

Spinoza regarded thinking and extension not as opposites, but as the two essential attributes of the one absolute substance, which was all in all, like the ὄν of the Eleatic school.

And just as the Jewish mind of Spinoza could not abide Descartes's Dualism, so the mathematical mind of Leibnitz would not abide Spinoza's Monism. He, too, mixed the *res cogitans* and the *res extensa* into a totality, but this totality was not a substance. It was an aggregate of *monads*, each thinking and having extension at the same time. Why make a dualism of light and darkness? Both are a multiplicity of rays, either spectral or invisible.

It was difficult to choose between such leaders. The English mind, in fact, refused the choice altogether. Being naturally averse to speculation, it had reduced philosophy to induction. But induction presupposes empirical data. Empirical data are

liable to criticism ; and criticism, in its turn, is disarmed and rendered useless by scepticism. Thus Bacon, Locke, and Hume constitute a natural succession, and what they have in common is, to this day, the basis of all English philosophy. Bacon had opposed all *a priori* thinking. Observe and infer was his rule, because induction is safer than syllogisms. But what is the difference between them ? Induction is a syllogism with a suppressed major premise. That major premise is always a general proposition, and, as such, the enunciation of a thought. And if the empirical mind dreads generalizing as dangerous and unsafe, does it avoid these dangers by merely hiding them from itself ? All empiricists have this in common, that they do not know when they are thinking. Men think as they walk. They use hundreds of muscles without being conscious of any one of them, or of the various orders sent to each muscle by their brain.

Bacon was right in warring against the old scholastic syllogism, in which, usually, neither premise was sufficiently sound to warrant a conclusion. But induction deceives itself if it pretends to draw conclusions from one premise. I observe a phenomenon ninety-nine times, and infer that it will happen the hundredth time. If it does not, it follows, not that the inductive method is wrong, but that this induction was founded on a weak premise. And if the ninety-nine observations were correct, where can the flaw lie ? Obviously in the suppressed *præmissa major*, which, in inductive reasoning, can never express more than a probability or plausibility. The syllogism now stands thus : A thing which has happened often is *likely* to happen always. This thing has happened ninety-nine times : therefore, it is *likely* to happen always.

How much of this inductive syllogism is founded on observation and experience ? Nothing but the minor premise. The first premise, being a general law, is thoroughly speculative, and the conclusion, being the result of a synthesis of the special and the general, is thoroughly metaphysical. And if observation is the only legitimate source of knowledge, the important question arises, How do we come to know any general law, or, in fact, anything general or abstract ?

We can observe nothing but single things. Their connec-

tion, causal or analytical, is never observable, can never be experienced. When we infer the hundredth fact from ninety-nine observed ones, or when, after having observed two facts, we call one the cause and the other the effect, we overstep the limits of observation. We have seen the planting of a seed, and we have also seen a plant. The senses can show us nothing more. But why is the plant the result of the seed? And where is the origin of our knowledge concerning generality, causality, and necessity?

Bacon was not the man even to broach this question. But Locke and Hume have answered it, each in his own way. Locke said that although generality, causality, and necessity were not, as such, observable, they were, nevertheless, *derived* from observation, or, rather, from observed data. The mind (although endowed with the mysterious power of *deriving* one thing from another thing) was nothing but a reflector, the recipient of impressions, a *tabula rasa*, having neither "innate ideas" nor anything else innate. Locke forgot, if he ever knew it, that a reflecting surface is never purely receptive. It reacts, and must, *pro tanto*, have spontaneity. A *tabula rasa*, be it ever so *rasa*, is still a *tabula*, is still something. And why should it be less? What if the human mind had no concrete reality at all, but were a mere focus of a reflecting world, — like Professor Pepper's ghost, the product of converging rays, which disappears as soon as the mirrors are shifted? Either the mind is purely receptive, as Locke maintained, and then it cannot work up its impressions into ideas; or it has some spontaneity, and then experience ceases to be the only source of human knowledge.

Hume, without being much of a philosopher, has the merit of having felt the force of this dilemma. He did not believe in *innate ideas* any more than Locke did. Like Locke, he *derived* everything from observation and experience. But this power of *deriving* something from something else, he honestly tried to account for. And as the outer world could not furnish it, its origin had to be sought in the mind itself. There it exists, not ready-made like an "innate idea," but potentially as an attribute of the mind. The phenomenal world furnishes the mind with nothing but single items in (spatial) juxtapo-

sition and (temporal) succession. But the mind furnishes their connection by arranging the observed data in certain rubrics of its own, called mental "categories." In this way only does the mind discover juxtaposition and succession, sameness and difference; that is to say, space and time, causality and generality. Hume had not the courage to go a step farther, and to add necessity to the categories of understanding. There are no *laws* of thought, he said. Experience shows the absence of uniformity in human thinking, and all that can be safely affirmed is, that each mind thinks according to its own *habit*. Now, habit may be defined as subjective necessity. The mind mistakes its own habit for outward necessity; and what we call law (or necessity) is nothing but a vision or hallucination induced by our habit of observing certain groups and certain sequences of phenomena. This thorough subjectiveness constitutes Hume's scepticism. On applying his somewhat shallow doctrine of Habit to ethics, we discover at once the impossibility of all ethics, there being no firm basis for any moral law except habit. Some nations legalize infanticide; others punish it. Each does what it does from habit, and one view may be as good as the other.

Nothing, then, remains but a world of unconnected phenomena and the human mind, with its power of perceiving them and its *habit* of connecting them. We may gain experience, but there is no law and no necessity in the world. There may be learning, but there can be no real science, no truth, no certainty anywhere.

This roused the German mind. Historically, we are indebted to Hume's Essays for Kant's *Kritik der reinen Vernunft*. Not that Kant was alarmed at Hume's scepticism. On the contrary, his own dislike to the dogmatism of the old school metaphysicians was so great that he was eager to seize the new weapon himself, which had proved so brilliantly destructive in the hands of English philosophers. Only he thought that the havoc had been unnecessarily great. He therefore undertook to submit the whole question to a careful re-examination, the results of which form the substance of his celebrated *Kritik*.

Kant agreed with Hume, against Locke, that generality and necessity could not, as such, be perceived or experienced.

But, he added, they *may* have objective reality for all that. Mathematics have an absolute validity. There is nothing subjective in them. Hence they must have objective reality. And this reality, being abstract, must be sought in the mind itself. In other words, there are general ideas, laws of thought, and absolutely binding necessities which exist *a priori*, always and everywhere, and not, as Hume had maintained, *a posteriori*, that is to say, as uncertain results of a subjective habit.

This was a great step. It was the first sober self-assertion of the intellect without any dogmatism or arrogance. The majesty of thought was proclaimed together with its limitations. Human thought and human consciousness became our highest authority, but only in default of any higher one, and with the express understanding that the limitations of this authority implied the necessity of an unlimited or absolute authority. Kant's philosophy begins with these limitations, and ends with this implied necessity. To determine the natural limits of the human intellect, is the critical task of theoretical reason. To determine the implied necessities (or postulates), is the speculative task of what he called practical reason.

His criticism led him to agree with Locke, that all knowledge comes from experience and observation. But observation and experience, he added, are not knowledge themselves. In them we know only our own perceptions, but not the thing perceived. We can see the image of a thing, that is to say, a phenomenon, and we may know all its attributes and relations ; but the essence of the thing, the thing itself, cannot be known.

As this thing *per se*, or *Ding an sich*, as Kant calls it, has become a current technical term in modern philosophy, we will explain its meaning by a few examples.

When we say we know what gold is, we mean that we can distinguish it from other substances, either at first sight or through some tests. We know, in fact, a good deal *about* gold. We know that it combines with chlorine, that it resists organic acids, that it is extremely malleable, that it is the best conductor of electricity, that it reflects yellow light and transmits green light. Science may add a hundred more to these truths, but it will never enable us to give a definition of gold. The "thing itself" remains a mystery.

And is not matter itself a mystery? The chemist and materialist are equally incapable of telling us what matter is. The chemical formulas give us some fixed numerical proportions, and crystallization shows us some fixed geometrical forms. We can penetrate still further into the recesses of material nature by boiling, fusing, freezing, sublimating, and precipitating. We can look at matter through the microscope, the polariscope, the spectroscope, and the telescope, and may acquire great learning in this way. We may become so familiar with the properties of hydrogen that we recognize its presence on the surface of Sirius, and judge from the shifting of its spectral band whether Sirius is drifting away from us and at what rate. All this is very grand, and science is justly proud of these achievements. But they throw no light whatever on the nature of hydrogen.

Chemists believe in their formulas, because they are founded on the atomistic hypothesis and verified by experiments. But these formulas would be correct, even if the atomistic hypothesis were false. There are some few chemists, even now, in Europe, who do not believe in atoms. The atom, then, this ultimate type of matter, this alpha and omega of modern chemistry, turns out to be a purely speculative thing, never seen by human eye, which may or may not exist, and which, in neither case, would help us to understand the nature of matter or of force.

In like manner the science of electricity, rich and interesting as it is, has so little to do with electricity itself that the truth of its facts and the validity of its laws seem altogether independent of the nature of electricity. This mysterious something may be one, or it may be two. It may be one fluid with two currents, or two fluids, or no fluid at all, but mere motion, or a force or two forces. Let us suppose, for argument's sake, electricity were known to be mere motion, and that we further knew what was the mover and what the moved in such a case: we should still be as far as ever from any real insight into it, motion itself being a metaphysical conception, as utterly beyond the grasp of physical science as force and matter.

Physiology fares no better in its attempts at finding the sources and defining the nature of life. Is there such a thing as a vital force, or is the body its own crucible and nothing but

that? And how is it that no "homunculus" can be evolved from phials and retorts? What can there be more humiliating to science than the fact that the question concerning spontaneous generation cannot be decided *a posteriori*, and has not been decided *a priori?* There are learned physiologists who know a great deal about the soul, but cannot tell whether there is a soul, or what it is, if there is one.

Kant, though living before the great modern revival of science, had really succeeded in determining the limitations of all empirical knowledge. Behind the phenomenal world, which is perceptible and thus far knowable, stands the everlasting mystery of the *Ding an sich*. And whatsoever transcends the narrow circle of empiricism becomes *transcendent;* it can no longer be observed, no longer underlie our inductive reasonings. If it beckons to us, if it tempts us to follow it, we must either resist the temptation or become speculative.

The *Ding an sich* being transcendent, we must speculate on it or drop the subject altogether. Kant, wishing to be a critic, did not like to speculate. If physics are a science, he said, metaphysics cannot be a science. Nevertheless he did speculate, but took care to insure his incognito by speculating under the name of Practical Reason.

This "practical reason" was bold enough to *postulate* God and the immortality of the soul, but was too cautious to commit itself to any doctrine concerning the *Ding an sich*. Kant never said that the *Ding an sich* had any objective reality, and he never said that it had none. He was certainly no Idealist in Berkeley's sense. Nor was he a Monist or a Pluralist. He speculated on the *Ding an sich* merely in so far as it would help him to some doctrine on the *origin of evil*, and on the *origin of moral obligation*. Evil he derived from the materiality of the world. This materiality manifests itself to us as plurality. There can be no doubt about the plurality of phenomena, and the individual mind, not being plural, but single, suffers from the contrast. It reacts against plurality in two ways, by thinking and by willing. Thinking is the synthesis of the special and the general, the (general) idea being nothing but what is common to several single things. And as the normal thought deals with the phenomenal plurality by furnishing an ideal *unity*, so the normal

will deals with the phenomenal plurality by furnishing an ideal *harmony*. Both the intellectual unity and the moral harmony are strictly ideal. The intellectual unity is a presupposed principle, the moral harmony appears to us as an unrealized *end* or *aim*. It might be objected that the *principium individuationis*, through which unity becomes plurality, is the same through which chaos becomes kosmos, and that we are bound to affirm plurality as belonging to the fitness of things. But Kant speaks of a moral kosmos which is not a ready-made creation. From an ethical point of view, plurality is still chaos which is intended to *become* kosmos through us. It is a postulate of practical reason, a "categoric imperative," that we should recognize this potential harmony and make it our aim. To treat the discords of life as finalities, that is to say, not to presuppose an ideal or potential harmony, is moral erring. To presuppose it and not to will it, is moral evil, is sin.

Such are Kant's ethics, — by far the grandest part of his philosophy. They form a noble structure, whose tops are glittering with heavenly light, but whose lower parts are hidden in clouds. It seems to float in mid-air; and when we look for its foundations, we find nothing but a carefully swept area, neatly mapped out in lines and rubrics. All the rubbish has been cleared away, but we find no building materials either. All is regulative, nothing constructive. And we apprehend that no system of ethics can long subsist without some metaphysical or, in default of such, some dogmatical foundation. Kant's postulates do not furnish such a basis. They are, indeed, metaphysical, (what can be more metaphysical than postulating?) but Kant does not handle them as such. Metaphysics thrown out by the front door creep in again by the back door, and, being properly disguised, are admitted. But the consequence is, that Kant's God remains outside his philosophy, and seems to have nothing to do with the essence of things (the thing *per se*) or with the intellectual unity or the moral harmony of the world.

It was easy to foretell what kind of work would have to be done by Kant's successors, and how the tasks would have to be divided. If plurality and materiality are the sources of evil, there must be two ways of overcoming the evil. The opposite

of individualism (or egoism) is altruism, which bids us love our neighbor; and the opposite of the body is the spirit, which bids us kill the flesh. The former leads to Fichte's *moral kosmos*, the latter to Schopenhauer's *askesis*.

We ask at once, Why should either exclude the other? Both are contained in Christianity, if Christian doctrines may be considered as one homogeneous whole. But the difference between Fichte and Schopenhauer lies principally in their prospective views, their eschatology; and both again differ from Kant, who would not commit himself either to a diagnosis or to a prognostic concerning the world's evil. To Kant the world was actually neither good nor bad, but both *in posse*. Fichte admitted its actual badness, but asserted its final deliverance; while Schopenhauer proclaimed it not only to be bad, but to be hopelessly bad, leaving the *onus probandi* to his opponents.

Fichte acknowledged the limitations of theoretical reason as they had been traced by Kant. He knew nothing beyond the existence of the Ego. The Ego is "unconscious activity," and remains unconscious until it meets with obstacles through contact with which it becomes self-conscious. These obstacles are the Non-Ego, called by the Ego "the outer world." Hence there can be no self-conscious Ego without a Non-Ego, no I without a Thou. That is to say, every Ego or self-conscious being must be a finite being, limited by others. And therefore God can be no conscious being, added Fichte's enemies, who accused him of atheism. Fichte, it is true, did not often use the term "God." Yet his mind was a profoundly religious one. He sought a thinkable, conceivable God, and if he could not find a personal one, he accepted an impersonal substitute. The *attritus* of the Ego and the Non-Ego is the origin of evil. But, Fichte added, we need not abide by this result, the effect of the *attritus* being in reality twofold. It generates, indeed, the evil, but it also produces in us a *longing* which can be either eudæmonistic or ethical. We long for happiness or for perfection, for deliverance from suffering or for deliverance from evil. And thus far, we shall see that Schopenhauer's views coincide with Fichte's. But while Schopenhauer considers this "longing" as a finality, and makes it a plea for his Pessimism, Fichte infers from it its own justification which

can only lie in the ideal existence of a "*moral order of the world.*" This moral kosmos, or "moralische Weltordnung," as he calls it, becomes Fichte's substitute for God. It becomes his "kingdom of heaven" or kingdom of the unknown God, and thus the "ethical longing" becomes a practical religion founded on a speculative faith.

This faith in the ultimate realization of the moral kosmos was very intense in Fichte, and imparted to all his doings and sayings a certain tone of heroism.

"The moral order," he said, "is inconceivable, and altogether opposite to the physical order of things, inasmuch as, in the latter, the result depends on what has happened, in the former on the aim and motive alone. The longing for that order of things cannot be appeased by any earthly good or gratification. It is, therefore, absolutely necessary, nay, the only thing essential in all religion, that we should have faith in that order of things, that we should recognize in it the true source of our duties, and that we should cheerfully submit to all that is implied in it." Fichte scorned eudæmonism, "whose sole aim is pleasure, coarse pleasure or refined pleasure, but always pleasure, always enjoyment in this life and enjoyment in the next life. When people become aware that all these enjoyments depend on a higher power, they call that power God and pray to him. But their God is nothing but Fate personified, an idol, or, at most, a prince of this world."

The weak point of Fichte's philosophy lies in its apparent strength, in the absolute certainty of the final triumph of good over evil. The moral order of things lies, it is true, outside the Ego, but it lies there ready made and ideally real. According to Christianity, this moral order of things has to be produced within us and by us, and the result is doubtful, because the kingdom of God has to "come" from God. Its advent is prayed for, that is to say, it may come or it may not come. Each Ego is in danger. Salvation is possible, but so is perdition. Much depends on individual merit, but much also on "divine grace." And if the eschatological fate of man is so uncertain, how could the ultimate triumph of good over evil be looked forward to, as if it were deducible from human nature? Christianity, therefore, cannot be optimistic, although individual Christians may be so, when they consider themselves as being in possession of the necessary "means of grace." The

saint, for instance, suffers cheerfully, the martyr dies joyfully, because their sufferings are trials to them, and, as such, marks of divine favor. The term "trial" implies uncertainty of results; but the saint's resignation and the martyr's death insure the result in this case.

Hence probably the leniency, not to say partiality, with which theologians are disposed to judge the pessimistic Schopenhauer, notwithstanding his atheism; while Fichte, Schelling, and Hegel are called miscreants, and proscribed by them as dangerous on account of their optimism. Theologians rather like the suffusion of *tristitia christiana* which characterizes Schopenhauer's philosophy, and recognize in it, unconsciously perhaps, its redeeming quality; while the doctrines of the Optimists furnish none of those disciplinarian weapons which schools and churches are naturally unwilling to dispense with. According to the Optimists, there is no fear, no danger, no perdition. The struggle with the evil may be hard, but there is no doubt about its final issue. The evil is subordinate to the good, not coessential with it. It lies on the surface of life, like a sprinkling of spice. It appears large and powerful, because we are small and weak, but there is "health in us," for all that. Evil is the ferment of history. It dies through fermentation, and fermentations produce new ferment, but only to work out the designs of the absolute wisdom which rules the world. If Hegel's Absolute were anything else but Intellect and Wisdom, it could not be absolute. If the essentially Bad or moral evil were deducible from it, it could not be Wisdom. The evil that exists in the world can exist only as the handmaid of God's household, not as its mistress. Thus, all that is, whether we call it good or bad, is good. It is good because it is rational, and it is rational because it has its *raison d'être* in the absolute Intellect. If it were not rational it could not exist, simply because there is no conceivable power that would give it existence.

It is obvious that in philosophic systems like these, the distinction between good and evil becomes, in a measure, effaced. Educationally, they are not likely to quicken or to sharpen the sense of right and wrong, or to induce that passionate abhorrence of evil which inspires the moral crusader. The ethics

of these systems are purely intellectual. They afford no ground for that religious longing which Fichte felt, or, indeed, for any longing whatever. For, if all is good, or will come right in the end, all longing is folly.

It is well to remark here, that Schelling and Hegel stand altogether on extra-Kantian ground, and form no links in the chain to which Kant, Fichte, and Schopenhauer belong. We have thought it necessary, however, to explain the real meaning of philosophic optimism, and to point out the boundlessness of its horizon, before we approach the fathomless abysses of philosophic pessimism. The true successor of Fichte was Schopenhauer. Yet Schopenhauer was an opponent rather than a follower of Fichte. And perhaps both may be considered as representing the two possible ways in which Kant's unfinished structure could alone be completed.

After these introductory remarks, it will be easier for us to give a succinct account of Schopenhauer's philosophy. The only remaining difficulty of the task lies in the incoherency of the system itself. For, notwithstanding its many beauties and its depth, Schopenhauer's philosophy is as bad as Schopenhauer's world, — in this sense, at least, that it consists of two parts which logically exclude each other. And we may wonder how it was possible for such a man to reach the age of seventy without having been disturbed and distressed by this incompatibility.

His philosophy may be summed up in the following tenets: —

1. The world is phenomenal, not real.

2. Space, time, and causality are categories of the understanding, and have no objective reality.

3. Both the phenomena and the intellect, the perceived object and the percipient subject, are manifestations ("self-objectivations") of Something, which is to the world what the *Will* is to the individual.

4. There being no causality in the world, the primordial "Will" can have no aim. Its self-objectivations must, consequently, be accidental, and they happen to be bad.

5. There are many degrees or stages of this self-objectivation. These stages are the types of things, called ideas and species.

6. One of these stages is the *Intellect*, which is the creature and the servant of the "Will." In it, the Will becomes self-conscious and capable of having aims or *motives*.

7. The Intellect, however, seeing the general badness of the world, condemns the motives of the Will, and the Will itself. The Will (or the flesh) must be subdued, and the motives be supplanted by *quietives*. Rest and annihilation are the highest goods. *Ascetics* and *quietism* are the highest forms of ethical perfection.

All this requires explanation. But we see at once that there are two distinct philosophies in this system. The first two articles contain the fundamental creed of Idealism. Locke and Berkeley said, the world is purely phenomenal, not real. Kant said, the world is certainly phenomenal, but *may* be real. Schopenhauer, therefore, was an ultra-Idealist, like Berkeley. *A fortiori*, he was *as* idealistic as Kant, and ought to have respected Kant's limitations of the Intellect. But having proclaimed the phenomenality of the world, he proclaims, in the same breath, its objective reality, the world being an objectivated Will. As an Idealist, Schopenhauer was not entitled to know anything beyond his own impressions. Yet he talks of the essence of things as if it were knowable and known, and defines the *Ding an sich* as Will; — a strange definition in the mouth of a man who professes to be a hater of metaphysics.

All Idealists, it is true, have been guilty of similar inconsistencies, even Kant and Fichte. But this involuntary trespassing on metaphysical grounds only proves how difficult it is for the human mind to remain long in the vacuum of agnosticism. It likes to start from the safest of all maxims, that we can know nothing but phenomena. But it is useless to start from such a principle, except on an errand of criticism. No philosophy can be founded on strict idealism, the evidence of the senses not being the only evidence; and as circumstantial evidence is admitted in a court of justice, so speculation must be admitted in philosophy. All metaphysical thinking must start from the assumption that the phenomenal world is real.

Schopenhauer did this, too. Nor can we blame him for that. A man may have one philosophy in his youth and another in

his old age. Fichte and Schelling have each had two distinct philosophies. But nobody ever succeeded, as Schopenhauer has, in mixing up two incompatible doctrines, not only in one book, but in the six words forming its title. The work entitled *Die Welt als Wille und Vorstellung* may be considered as containing the whole of Schopenhauer's philosophy, of which we are now going to give an abstract. But, to avoid confusion, we will begin with Schopenhauer's Metaphysics, and then pass to his Psychology and Ethics.

1. The greatest difficulty in all Metaphysical thinking is the beginning or starting-point. It is easy to say: In the beginning there was Something; but very difficult to define that Something so that it might become the basis of a rational cosmogony, or that everything existing might appear derivable from it. The primordial Something can be either One or Many. If we admit the pluralistic principle, we have, of course, no further difficulty. But it is difficult to make up one's mind for pluralism. "Many" has no definite meaning, and any definite number would be arbitrary, there being no reason why any one number should be assumed rather than another. Thinking cannot stop or find rest until it comes to the Unit. The Many presuppose their own totality, and whatever there was first, either logically or temporally, must have been One. But here new difficulties arise. The Unit is something perfectly sterile. It is as true to say that nothing can come from One as it is true to say that nothing can come from Nothing. Two might suffice, but one does not. Given some kind of Dualism, the dualism of sex, for instance, or that of spirit and matter, of matter and force, of God and the Devil, of Ormuzd and Ahriman; and the universe can be conceived as being derivable from it. But what can logically be derived from One? The author of Genesis was no philosopher, and could have no difficulty in answering the question. But the author of the Fourth Gospel, being an Alexandrine philosopher, endeavored to write for thinking readers. The Johannean "Logos" was not alone, nor was the Johannean God. The Logos was, indeed, God, and so far there was but One. But the Logos was also πρὸς τὸν θεόν, that is to say, in whatever way we may render the Greek preposition, the Logos was either a part of God or something be-

sides God. And consequently there were Two. Otherwise, the Logos could never have become flesh, or, in fact, anything but what he was before.

Something similar we see in Hegel's Absolute, which is one, but becomes two, — a mysterious process of which we can form an idea only by comparing it with the phenomenon of self-consciousness, which consists in this, that the Ego perceives itself. And when a subject thus becomes its own object, it becomes dual. Although this self-objectivation is a phenomenon with which we are all familiar, it is essentially transcendental, and nobody can be forced to admit what he does not understand. Schelling found it easy to ridicule Hegel's Absolute, because it had to go "beyond itself." Why should anything go "beyond itself," or anybody be "beside himself"? Nothing but *ennui*, he said, could have prompted Hegel's Absolute to do such a thing. Schiller says: —

> "Friendless and lonely was the Lord of heaven,
> He felt a want, hence he created souls." *

If we strip Schelling's sarcasm of its frivolity and Schiller's verse of its pathos, both will be found to express the same idea.

Monistic philosophy would, in fact, be altogether impossible without such a spontaneous self-differentiation of the Absolute. Monotheism calls it Creation, and the Alexandrine philosophers had no difficulty in deducing from it the metaphysics of the Trinity; anything dualistic or bi-une being *eo ipso* triune, since two cannot be conceived without their relation, which is the third. Hegel's dialectics rest entirely on this doctrine, and are essentially trinitarian. But Schopenhauer knew nothing of dialectics. He wanted to be thoroughly monistic, forgetting that all monism implied dualism and trinitarianism; not, of course, the legendary or historical trinitarianism of Christianity, but that of logical conception. He called his Absolute *the Will*, and it was easy enough to work with such a convenient tool. But the terseness of this monosyllable was deceptive. The difficulties were hidden, but not overcome. Nor must it be

* Freundlos war der grosse Weltenmeister,
Fühlte Mangel, darum schuf er Geister.

supposed that it was the result of speculative thinking. Schopenhauer admits that he arrived at this theory through mere generalization, or rather through a conclusion *ex analogia*.

"When we contemplate inorganic nature," he says,* "when we observe the fierce irresistible *impulse* with which the waters rush towards the lowest level; the persistency with which the magnetic needle turns and returns towards the north pole; the *longing* with which iron flies towards the magnet; the *violence* with which the two poles of an electric current seek reunion, and which, like human *desires*, is enhanced by obstacles; when we watch the rapid formation of a crystal and observe the regularity of its shape, so evidently the result of well-determined *tendencies* radiating in various directions; when we consider the *selection* with which bodies set free from the trammels of solidity seek and avoid, attract and repel each other; or when we feel how any weight whose *tendency* towards the earth is arrested by our body, presses upon it incessantly as though unable to give up its purpose; — it will require no great effort of imagination to recognize, even at this great distance, our own being and nature, — that same agency which, within us, by the light of the Intellect, pursues its aims, while in inorganic nature, as in the feeblest of its manifestations, it heaves and moves, but blindly, tumultuously, onesidedly; and which, being always essentially and specifically the same (just as the faint rays of twilight and the glare of noontide are both specifically solar light), must here as well as there be qualified as *Will*, — Will being the essence of every simple thing in the world, the sole ultimate nucleus of every phenomenon."

2. But of Will nothing can be predicated except *specific restlessness* (space, time, and causality being mere categories of the understanding). The Will must be what the *Ding an sich* would be if there were no space, time, or causality. In other words, the Will must be *aimless*, *non-extended*, *eternal*. We might say, that those who wish to speculate on the origin of things and the causes of phenomena, ought not to begin the process by stripping both things and phenomena of all reality; and that Kant, though reducing space, time, and causality to mere forms and categories, never intended such a negative result to form the basis for constructive speculation, his *Kritik* being a mere theoretical ablution of the Intellect, and, as such,

* Die Welt als Wille und Vorstellung, I. p. 140.

belonging to its nursery, not to its study. Nevertheless, we would abide by Schopenhauer's conclusions, had he not found it necessary to upset them with his own hands.

3. For, he goes on to say, *the Will objectivates itself* (which presupposes space), that there are successive *stages of objectivation* (which presuppose time), and these stages are progressive (which presuppose aim and wisdom), although the Intellect which is to think these thoughts of space, time, and aim was yet unborn when the Will began its evolutions. It may be quite proper to say, in the beginning there was the Will. "Will" seems, in fact, a better term here than either νοῦς or λόγος, because it implies a relation to something (real or ideal) which lies outside the willing subject. But, then, the thing that lies outside the willing subject is nothing but its aim. What else can it be? And can there be an aim willed, or an aiming will, without causality?

If the Will is rational and conscious, then its objectivations which constitute the visible world must all be good, and we obtain the living personal God of Christianity. If it is aimless and unconscious, as Schopenhauer's Primordial Will, then the world must, on the whole, be *bad*. Chance, the dreaded τύχη, becomes the ruler of the world, and philosophy has no other task but to demonstrate that the universe is æsthetically a chaos, intellectually a madhouse, and morally a penitentiary or a bagnio. This is Schopenhauer's Pessimism. Not that there is not much in this world that is good and pleasant. In fact, how could it be otherwise? If chance rules, the law of chances must prevail, and that can only lead to a perfect equivalence of good and evil, there being no reason why the aimless, blind, unconscious, restless Will should objectivate itself more frequently in one sense than in the other. But Schopenhauer loses sight of this. Like Mephistopheles, he seems to think that whatever exists is worth perishing. If the world were a Theophany, he argues, it would be good, and everything in it would be equally excellent and perfect. There is much (no matter how much) that is bad and imperfect. Therefore, it cannot be a Theophany or manifestation of God, but can only be a manifestation of something as bad as itself. He did not say, God is too good to have created the seeds of evil. But

his Christian critics seem to give him credit for the sentiment as implied in his doctrine. Christian philosophers derive the origin of evil from an apostasy of the Spirit, from himself, commonly called the Fall. The two powers created by this defection struggle against each other, and thus produce the ills and evils of the world, for which the fallen Spirit, and not the Creator, becomes responsible. If Schopenhauer declares that he would rather believe in no God than in a God responsible for this bad world, his very atheism becomes a Theodicea, and we understand why theologians should prefer this atheist to Hegel, who professed to be a Protestant and a Trinitarian.

4. The objectivations of the aimless and unconscious Will might, of course, be anything. They might be bad or good, and must be of all imaginable degrees of imperfection. Nor can we see any reason why better objectivations should not be followed by worse ones, and why there should be anything like graduation or progress in this wild succession. Schopenhauer, however, assumes or implies such a graduation, and we must grant that, at all events, many different grades coexist in the actual world. More than that, — and this is an important and interesting point in Schophenauer's philosophy, — this graduation is not continuous, but punctual (in the metaphysical sense of the word) ; it is not a slope, but a scale, not a flowing stream or a running wheel, but a succession of *steps*. And what are steps, and what is a scale or a ladder, but an alternation of rises and rests, moves and stops, gaps and fixtures? Each degree of objectivation must, therefore, be considered as a resting-place, an *ἀνάπαυλα* of the Will ; and these objectivations, these halts of the restless Will, are all that is fixed and permanent in the universe. They are the everlasting *types* of nature. They are what Plato's Ideas were, and what we are wont to call *qualities* and *species*. And they alone endure, while everything else is changing, fleeting, transitory. We might compare these *stages of objectivation* with the nodal lines in Chladni's acoustic figures, where all that moves (the vibrating interstices) appears empty and is invisible, while we see only what is at rest, the *ἀνάπαυλα* of the sand, and call it a figure or a type.

This is a deep and fertile thought, — a thought whose depth and fertility are quite independent of the general validity of

Schopenhauer's speculations. We cannot blame him for priding himself on having found a new basis for Plato's Ideology; and even modern science may thank him for having furnished a theory which cannot but be welcome to those who are engaged in reducing the organic world to a minimum number of primordial types or germs, and whose weakest point has hitherto been considered to lie in their inability to account for the absence of intermediate or transitional types.

It has been said that there are no gaps, no sudden breaks of continuity in nature; that every gulf is bridged over by hybrid types, by corals, by sensitive mimosas and the like. It must be admitted that, at first sight, the transitions from one state or stage to another appear very gentle, and are often imperceptible to us. But proverbial philosophy, which deals in this sort of truth, forgets that this gentleness and occasional evanescence of transition are real only with reference to our own powers of perception. A membrane looks smooth only until it is put under the microscope, and a nebula looks like a cloud only until the telescope dissolves it into stars. Science, in fact, has already shown that there is no real, no absolute continuity to be met with in nature; and it behooves metaphysics to show why it is so, and why it cannot be otherwise. Concrete reality belongs, and can belong, to nothing but what is perfectly definite; that is to say, to ideas and to species, to atoms and to individuals. The *fond perdu* which forms the background of this world is the world of abstract possibilities and abstract necessities, the world of formal logic and of mathematics. There even continuity can be found; but in no physical phenomenon, except in motion, which (as we had occasion to remark before) is the most metaphysical of physical phenomena. A harp-string *can* be divided in numberless ways. By passing our finger over it, so as to shorten its vibrating portion continuously, we can imitate the sighing and howling of the wind. But expose the undivided and untouched string to the wind, and it will give forth music, that is to say, *articulate* sound, the articulation being due to a spontaneous subdivision of the string. Thus noise becomes music through nothing but the individualization of the notes, or through the precision of their intervals. And chaos becomes kosmos through nothing

but the clearly marked and unalterable differentiation of types; that is to say, of qualities and categories, of definite quantities and atoms, of crystalline forms and organic germs, of species and individuals.

5. The lowest forms under which the Will manifests and stereotypes itself are the general qualities and forces of nature, — solidity, liquidity, elasticity, attraction, and affinity. Then come the various phenomena of inorganic nature, its beauties and its terrors, the crystal and the rainbow, light and sound, the geological, meteoric, and cosmic phenomena. On going one step higher, we find the Will objectivating itself in *organic* forms. But since life as organic existence is impossible without *active* self-preservation and propagation, the Will can no longer afford groping and fretting in the dark, and finds it necessary "to light a torch." This torch is the *Intellect*. It is at first mere instinct, half conscious only, and half blind. It is *the servant of the Will*, and recognizes the Will in the garb of its own organic *body*. It throws, as yet, but a dim light on the path of the ever-restless Will, but that light helps the Will to the various means of self-preservation and propagation. The selection of these means presupposes discrimination and design, neither of which the blind and aimless Will, as such, can have. The Intellect, therefore, must furnish both; and in furnishing perception and design, it becomes the *motive* power of its master, the Will. In other words, the hitherto aimless Will now begins to act from *motives*. So it is throughout the animal kingdom. Between the instinct of the lowest animal and the intellect of man there is only a difference of degree. The Intellect remains everywhere the torch or torch-holder, the servant or the tool of the Will. It sees, by its own light, first its own body, which it knows to be the Will, and then the Non-Ego or the phenomenal world, which it infers (*ex analogia*) to be the same Will. Thus Schopenhauer's world is "Phenomenon and Will," or, as he expresses it, "Perception and Will." As long as it is only Will, it is inorganic and dark; even its light being darkness, because unseen. But when the spark of Intellect is kindled, all is ablaze, and the Intellect sees its own light reflected from something which, if real, must be the objectivation of the Will; if not real, a vision of the percipient Intellect, a phenomenon.

6. Schopenhauer says that "the body is given to the Intellect" (that is to say, exists for the intellect) "in two different ways," — as part of the phenomenal world, and as part of the Ego. In either sense, it is, like every other perceptible thing, an objectivation of the Will. But the body, considered as part of the Non-Ego, is a direct offspring of the great cosmic Will; while the same body, considered as part of the Ego, appears to the Intellect as an *individualized Will*, rather than as part of the general Will.

This "identity of body and Will" has found no favor with Schopenhauer's critics. Nor are the passages relating to this doctrine written with the author's usual precision and clearness. On the other hand, we are at a loss to see why this doctrine — which must stand or fall with the whole structure of Schopenhauer's metaphysics — should have been singled out for attack by his adversaries. If everything, even the human intellect, is a manifestation of the Will, why should not the human body be so? And this body forming, as it does, the rampart between the Ego and the Non-Ego, its identity with the Will must obviously appear to the Ego under two different aspects. Every new fact brought to light by modern physiology affords an *a posteriori* argument in favor of Schopenhauer's purely speculative theory. We are not conscious of the action within our body, although every particle of that body is the scene of the most restless activity, night and day. The will, therefore, which is active within our body, is not our conscious will. Both are parts of the cosmic Will; but to the Intellect they appear as two wills, which — in disease, for instance, and in death — can be at war against each other. The "reflex action" of the motor nerves, and the various phenomena due to what Dr. Carpenter has most properly called "unconscious cerebration," are incontrovertible proofs of the great decentralization prevailing in our system, and of the existence of many subaltern offices scattered throughout the body, of whose cooperation or subordination the Intellect can never be conscious, although it may discover both through observation and inductive reasoning.

It is quite proper, therefore, to say that the whole of our body, even its central office, the brain, can be, and is, both

subject and object. As subject, it is, according to Schopenhauer, Will; as object, it is both Will and phenomenon. The Ego, therefore, is the point at which the Real and the Phenomenal or Ideal coincide. Belonging to both these worlds, it can look into both and mix them up theoretically, or lay the rubrics and categories of the one upon the other. On this coincidence Schopenhauer might have founded a very good apology for the hybrid character of his philosophy, which is, so to speak, an idealistic Realism. But he does not seem to have been clear to himself on this point. He commits himself to Idealism on one page, and curses its fetters on the next. "Theoretical Idealism," he says, "can be used only as a sceptical sophism. As serious conviction, it can be met with only in a madhouse. I would compare it to a small frontier stronghold, which is forever impregnable, but whose garrison is, in its turn, forever imprisoned. One may pass by that fortress and leave it behind, without any danger." An excellent simile. But, as one of Schopenhauer's critics* remarks, Schopenhauer was not aware that he himself was a soldier of that garrison. And, we beg leave to add, if we catch him on the open field of Realism, we may call him a deserter.

7. The Intellect, standing on this cross-road where the Ideal and the Real meet, performs two different acts.

First, from the fact that its own body is "given" to it in a twofold manner, as Will and as phenomenon, it infers that all other things, though "given" to it only in one manner, namely, as phenomena, exist, like its own body, in two manners, namely, as phenomenon and as something else whose nature is beyond the ken of the Intellect, but which it must, *ex analogia*, and from want of any better category, conclude to be similar or equal to the only datum at its disposal, which is the Will objectified as its body. Thus the Intellect becomes speculative, and evolves the various tenets of the philosophy which we are explaining here.

The second operation consists in the transferring of reality in the phenomenal world. The Intellect considers its own inherent qualities as objective outside realities. These qualities

* Herr Thilo, in his essay, "Über Schopenhauer's ethischen Atheismus," p. 21, reprinted from Allihn and Ziller's Zeitschrift für exacte Philosophie, Vol. VII.

are, according to Schopenhauer, the *four categories* of time, space, causality, and the *principium individuationis*. Of course, this is debatable ground; the choice of these categories being grossly empirical, and not justified by any metaphysical link connecting them and excluding others. But they may be called an improvement on Kant's more numerous categories. Time, space, causality, and plurality are in the Intellect, but not objectively in the world; at least, we have no certainty about their objective reality. To make the meaning of this quite clear, let us suppose that the human intellect had only the categories of longitude and latitude. It would then be unable to think of any locality without its two co-ordinates which define and determine it. Each geographical point would be perceptible to the Intellect only as the vertex of a right angle, and yet the two sides of that angle and the angle itself exist only in the Intellect and not on the surface of the earth. If the longitude and latitude of Paris have any reality at all, that reality is certainly different from that of Paris itself. In the same manner, if everything appears to us as extended, and if we measure its extension on the three co-ordinates of space, it does not follow that these co-ordinates, or that space itself, have any objective reality. All we can say of space is, that it is a form or category of our understanding. When certain perceptions follow certain other perceptions in time, we put the link of causality between them; and the more primitive, untaught, and untutored the human mind is, the more readily does it indulge in this operation. Culture tends to lessen the domain of causality. It may, at last, expel it altogether from the outer world; but it can never expel it from the mind, where it exists as an inherent category, as whiteness exists in salt or smoothness in a mirror.

These two are the only possible performances or functions of the Intellect. We have either perception or imagination, either Idealism or metaphysics, either empirical science or speculative philosophy. And if Schopenhauer has succeeded in blending these apparently antagonistic elements in his philosophical system, we ought not to find fault with him for that. We only find it difficult not to ask, from his own point of view: *Cui bono?* If the Intellect is nothing but one of the many objectivations of

the Will; if this Will is blind and aimless, and only wanted the Intellect to see for it and to cater for it, so as to preserve the organized individual by feeding and the species by propagation, — what is the use, we would ask, of these remarkable and uncalled-for powers of the Intellect; and how can the Intellect, whose only *raison d'être* was to serve the Will, ever succeed in breaking its chains and indulge in pursuits of its own, without the slightest reference to the wants and requirements of its master?

Schopenhauer answers: The servant of the blind man very naturally becomes his *leader*. Moreover, there are various degrees of servitude. The lowest form of intellect was the Instinct, which can have no independent pursuits of its own, but must attend to the interests of feeding and propagation. When the Intellect begins to think consciously, it has ceased to be the slave of the body, although it may remain enslaved to that form of will which we call the heart. It is then that the Intellect begins to furnish the Will with what it never had before, namely, motives, so that the individualized Will begins to have aims, while the cosmic Will continues to be aimless. And the more the individual Will learns to follow the motives suggested by the Intellect, the more complete will be the emancipation of the latter. Complete, however, this emancipation can never become. The greatest height to which the Intellect can practically rise is when it becomes capable of acquiring and seeking useless knowledge, that is to say, knowledge which has no reference to the wants of the body or the will. All abstract thinking and all science come under this head. Without being aimless, it is regardless of consequences, and therefore disinterested and unselfish. In fact, from Schopenhauer's point of view, thought is not only unselfish, but anti-egoistic, because the Intellect, having the *principium individuationis* among its categories, cannot generalize without turning against itself and destroying, *pro tanto*, its own nature. The intellectual difference between man and animal is precisely this, that the animal perceives only single things, while man perceives ideas; or, in other words, the animal perceives, man conceives, things: that is to say, combines them into conceptions or notions. But the In-

tellect is, as it were, prismatic; if its *principium individuationis* can do nothing but disperse, and must see everything under the form of plurality, how can the Intellect ever become capable of collecting and combining, of thinking and generalizing, without doing violence to itself? Schopenhauer says, very consistently, that ideas, being generalities, lie beyond the reach of the percipient Intellect. If they are perceived (or rather conceived), nevertheless that always entails or presupposes a partial *loss of individuality* in the thinking subject. The more the Intellect perfects itself, the better it will be able to dispense with the tools with which the Will has furnished it, and which we have called categories; that is to say, it will learn to think without reference, or with a minimum of reference, to space, time, causality, and plurality. It will learn to consider neither the When nor the Where, neither the Why nor the Wherefore, but simply the What of the thing, τὸ τί, that is, approximately, the essence of things, the *Ding an sich*. This is the height of scientific knowledge and of æsthetic enjoyment. The Intellect reaches it only by tearing itself away from the fetters of its own Will, from its individuality. Through this kind of intellectual suicide, the Intellect becomes a pure subject, face to face and alone with its object.

8. We now come to Schopenhauer's *Ethics*. The world, being the sum of all the self-objectivations of an aimless Will, must be bad. It may be *le meilleur des mondes possibles*, as a French philosopher has called it; but it is, for all that, a "valley of tears," a world of suffering, misery, and death. An aimless and restless Will could not, if it were conscious, be a happy being, because, on becoming conscious, it could become conscious of nothing but its own aimlessness and restlessness. Thus, rest would become its aim. But the conscious (or individualized) Will is the Intellect. Schopenhauer's Ethics, therefore, are summed up in the maxim, that *the highest aim of the Intellect must be rest*.

The Intellect, however, is free. It need not follow that aim. If it follows it, if it seeks rest, it seeks something which is the negation of the (restless) Will. All morality, therefore, consists in a kind of self-annihilation; in the "killing of the flesh," as the Christian Apostle expresses it, in the overcoming

of nature, as Hegel expresses it. If, on the other hand, the Intellect either ignores or disowns that aim, it affirms restlessness, that is to say, it affirms the world as it is. And by doing so, it approves and sanctions what is bad, and reasserts its own *principium individuationis*. It then becomes, intellectually, optimistic, and, morally, selfish and unrighteous. Optimism, we see, is a kind of sin with Schopenhauer, and, from his own point of view, he is unquestionably right.

There are two kinds of evil in the world, — the objective evil produced by the mere lawlessness of the Will, and causing the various forms of *suffering*, such as pain, privation, passion, sorrow, death; and the subjective evil produced by the wanton self-identification of the free Intellect with the lawless Will, and causing the various forms of *sin*, such as selfishness, vice, wickedness. Thus Schopenhauer's world is a world of evils and of wrongs, of cruelty and of suffering, of death and of sin. And there are many who agree with Schopenhauer. Pessimism always sounds like common-sense. But those who philosophize on the origin of evil are bound to remember (what we have said before) that even if chance were the ruler of the world, it could not be its highest ruler, the law of chances being still higher than chance itself. The idea of an absolute accidentality not subject to that law cannot be conceived at all, and must be excluded from all philosophy. The law of chances *must* produce perfect symmetry and perfect equivalence of good and evil. We grant that a thing containing not more than fifty per cent of badness may still be called bad; that a life one half of which is passed in the sick-bed may well be called a life of sickness and suffering; but only in popular parlance, not philosophically. This kind of "badness" is like a mental category; it is purely subjective. A philosopher has no right to say, the world is bad because of the essentiality of evil, which would imply the absence or accidentality of good. If good is accidental, evil must be accidental also. To assert the accidentality of both may be an error. But to assert the accidentality of both, and then to talk as if evil were essential (which is more than accidental), and good non-existent (which is less than accidental), is one of those rhetorical tricks which often disgrace the small talk of every-day life, and which may be pardoned by the fireside, but which cannot be tolerated *in cathedra*.

Descartes has said, *Determinatio est negatio*, and that is perfectly correct; all individualizing being essentially exclusive, separative, and, as such, negative. The statue which we admire in the artist's studio has literally pre-existed for thousands of years. It was complete when lying in the heart of the marble rock. Only it was surrounded by other homogeneous matter which the sculptor had to chip away. Now, all evil is negative. It is plausible, therefore, to derive it from "determination" or individualization. Almost all the existing doctrines on the origin of evil are founded on this view. Kant and Fichte sought the origin of evil in nothing else but in the plurality or materiality of the world, which is the result of the individualization or self-determination of some undefined Absolute. But plausible as such doctrines are, they are founded on a fallacy. Evil may be, and is, a negative principle; but "bad" is not synonymous with "negative." It is only through Hegel's dialectics that we have learnt to understand that, if the individual thing is inferior to the species, the species inferior to the genus, the genus to the idea, this inferiority also implies a superiority consisting in a higher degree of concreteness. The *plura* are concrete, the primordial *unum* is abstract. And if the *plura* are bad because determined (or negative) and finite, while the *unum* is infinite, they belong, on the other hand, to a higher degree of evolution, and their badness need not be "badness" in the ordinary sense of the word.

Schopenhauer, in fact, cannot be said to have derived the objective evil (the badness of the world) from any individualization or plurality. His *principium individuationis* he places, not in his Absolute, which is the Will, but in the Intellect (although the Intellect, being individualized Will, would seem to presuppose such a principle in the Will). And by committing this inconsistency, he gains credit for having escaped from a fallacy. All objective evil he tried to deduce from the aimlessness of the Will. But the subjective or moral evil he considered to be the result of the *principium individuationis* of the Intellect, and exhorted the Intellect to turn against this principle, that is to say, turn against itself, morally, in the same way in which we have seen it turn against itself intellectually.

The Intellect can do this, because it is free. Moral free-

dom, which, in other philosophies, is treated as a subject to be proved, follows, in Schopenhauer's system, as a mere corollary from the assumption of a lawless Will. The Intellect is free, because of the absence and impossibility of any law outside it by which it could be ruled. But here a difficulty arises, for which Schopenhauer has to thank himself. The Intellect, if ruled by no law, is nevertheless determined by its own qualities, the complex of which we commonly call *character*. These qualities being typical objectivations of the Will, it follows that the character of an individual can never change. I am what I am, and can become only what is implied in my character, as the tree can become only what is implied in its seed. An apple-tree cannot bring forth dates or pine-cones. The character of a man is his dæmon, but it is the dæmon chosen by himself, as Schopenhauer says. It is the logical definition of the man, his "What," his essence.

Now we ask, what is the use of freedom in an immutable being? No education can refine it, no experience, no knowledge enrich it. What kind of morality can we expect from such a being?

To answer this question, we should remember (what we have explained before) that as the percipient Intellect can go beyond the elementary perception of single things or rise to the conception of ideas, by unselfing itself intellectually, the *principium individuationis* being at once a power and a trammel to the Intellect, so the Intellect as conscious Will has also the faculty of unselfing itself ethically, that is to say, of turning against its own *character*. Both actions are of a transcendental nature. They are endeavors rather than actions, complete success being impossible in either case. And as there are three stages of intellectual development, namely, instinctive perception, scientific (or empirical) knowledge, and philosophic speculation, so there are also three degrees of ethical development,— *the stage of justice and equity, the stage of benevolence and love, and the stage of quietism.*

These stages have this in common, that in each the natural Will is more or less enlightened by the Intellect on its own misery and badness. This misery, let us remember, consists in the Will's restlessness and incapacity for fatigue. It is the

indefatigable Will, and not the easily tiring Intellect, which suffers from *ennui*, in cases of dearth of objects. It is the Will, and not the Intellect, which fights the battle of life and has a horror of death. Consequently the Intellect can become the guide and teacher of the Will. On the lower stages it merely guides it, that is to say, furnishes *motives* for the Will; on the higher stages it teaches it, that is to say, furnishes *quietives* for the Will. *Ennui*, love of life, and horror of death are weaknesses and vices, misnomers for stupidity, selfishness, and cowardice. And "the best thing in human life is its often-lamented shortness."

Thus the dualism in man becomes complete. *The Intellect condemns the Will.* One part of ourself annihilates the other. That is the essence of all ethics, and of Schopenhauer's ethics in particular.

In animals and in savage men the Will asserts itself most emphatically. "Thou shalt want ere I want," and "Thou shalt die ere I die." The love of life is love of self and relative indifference to others. We leave this lowest stage when we become *just;* that is to say, when we recognize the equality of other selves with our own self, and put spontaneously such limits to our will as shall allow room for other similarly self-restricted Wills.

Far higher than justice stand *love* and charity and mercy. They presuppose sympathy, or the power of "suffering with" others, which must precede the power of suffering *for* others. Vicarious suffering is not only useful, in so far as it may lessen the sum total of the world's miseries, but it is also a wholesome exercise or preparation for the third or highest stage of morality, which is that of the *askesis* and of *ascetic sanctity.*

Here self-imposed suffering — though it may have no reference to the sufferings of others, and neither lessen nor increase them — is nevertheless of the highest ethical value and importance, in so far as it kills the flesh, and, by killing the flesh, subdues and "deadens the Will." Solitude and contemplation, frugality and poverty, chastity and even self-inflicted castigations are so many triumphs of the Intellect over the Will, or, one might say, of the Will over itself. The paraphernalia of monastic life may be dispensed with; essential alone is the *spontaneous self-annihilation of the Will.* If the love of

self and the love of life are the sources of moral evil, then the love of others and the love of death must constitute moral goodness. This love of death must not express itself in actual suicide, because suicide is only the selfish extinction of one sufferer, while a whole world of sufferers survives: it must remain a mere sentiment, a *longing*. But this longing is different from Fichte's religious longing, induced in the Ego by its rude contact with the Non-Ego. Schopenhauer's ethical longing is not essentially religious: it is the nostalgia, the home-sickness of the soul. And what is the home of the soul? Something like the Buddhist's Nirvâna, says Schopenhauer, "of which we can form no clear conception," and which appears to us as Nothingness. "But," he adds, "if that transcendental world is Nothing in the eyes of those in whom the Will reigns supreme, this wonderfully real world of ours, with all its suns and milky ways, is likewise Nothing in the eyes of those in whom the Will has met with its negation." We need not mind such appearances.

What "motives" were in the lower sphere of morals, the great "quietive" of the soul, its longing for Nirvâna, is in this highest sphere of moral education. We die, whether we will it or not: the great cosmic Will works out our death, and there is no merit in our dying. But since man has to die of his life, he should "live his death"; that is to say, he should consider death to be his great "anapaulè," his last halt or resting-place, even though it may be only one of the many halts or resting-places of the eternal Will which once became his body and which wrought his soul.

These are the outlines of Schopenhauer's system of philosophy. We have found it impossible to trace these outlines without pointing out and dwelling on each flaw, as it came under notice. Many of these flaws, when pointed out, are so undeniably real, that they required no argumentative treatment. Yet it cannot be said that they are too obvious even to be pointed out. They seem to lie on the surface; but they lie on the surface of the skeleton rather than on the body of the system. They lie deeply imbedded in Schopenhauer's writings, and hidden by the beauties of his style. Schopenhauer

was a master of style, and not unjustly prided himself on his precision and clearness of expression. He hated the heavy utterances of scholastic learning. He hated still more the terminology of Hegelian dialectics. Moreover, he was a good linguist, who had benefited by the tyrannical discipline of foreign grammars, and learnt to make a sparing use of the liberties allowed by German syntax. No foreigner ought to complain of Schopenhauer's German. No German should read him without resolving in his heart to imitate the simplicity and beauty of his style. But it is this very beauty of form which hides the defects of Schopenhauer's philosophy. Style can be as dangerous in Germany as it has proved to be in France. One may read through some of Schopenhauer's volumes without being aware of the depth and metaphysical nature of their contents. An immense variety of subjects is touched upon in these books. Love and matrimony, music and painting, theatricals and politics, all are discussed in an easy yet earnest manner, and we are struck with the mass of new light that is thus thrown on matters with which we thought ourselves sufficiently familiar, and on which we fancied nothing new could be said by any popular writer. Everything seems plausible and clear. Occasional oddities are either pardoned and passed over, or enjoyed; and the absence of perceptible discords is mistaken for freedom from "false relations."* This is a new kind of obscurity: it is obscurity in the garb of clearness. Heraclitus was nicknamed "The Dark" (ὁ σκοτεινός), and to call Hegel obscure has become a popular amusement of a novel-reading generation. Yet the obscurity of Heraclitus was nothing but the depth of his speculative idea, and that of Hegel may well be called clearness in the garb of obscurity. It must not be supposed that Schopenhauer's style was "flowery" or rank, and that his errors lay hidden like snakes under its flowers and weeds. On the contrary, the beauty of his style consists in nothing more than in its chaste simplicity. We observe an occasional semi-Oriental richness of images, but these images are always remarkably exact and never irrelevant.

* A musical term.

Schopenhauer had a thoroughly manly nature, and even his Pessimism was free from all whining sentimentality. He was a recluse and a misanthrope, and had many of the foibles of misanthropes: he loved and esteemed his poodle apparently as much as any human friend. He was conceited and obstinate, but free from worldly ambition and indifferent to fame. We have seen that his principal work remained unnoticed and unknown for seventeen years, and that for seventeen years he remained silent, neither writing nor lecturing, — thinking, perhaps, with Descartes, that *bene vixit qui bene latuit.* Yet that book contained all that was dearest and most valuable to him; and while its author remained ignored, as though unworthy even of attack and opposition, the great Hegel stood enthroned in Berlin as mental sovereign of Germany, and surrounded with a blaze of glory such as few philosophers have ever been able to boast of. Schopenhauer disliked Hegel, and never mentions him or his philosophy without indulging in bitter and scornful language. But how much of this bitterness and scorn may have been due to purely intellectual antagonism, and how much to the striking difference of success with which the two philosophers had begun their career, we cannot undertake to decide.

That pessimism and kind-heartedness, far from being incompatible, can be made to enhance and to confirm each other, may be seen from the following passage: —

"Let us not make," says Schopenhauer, "a cold estimate of every man with whom we come in contact. Let us not take into consideration the badness of his will nor the limitations of his intellect and the perverseness of his ideas, lest the former might beget hatred, the latter contempt. Let us consider nothing but his sufferings, his anxieties, his sorrows, and his pains, and we shall feel at once as though we were related to him; and, instead of hatred and contempt, we shall feel sympathy and pity, which alone is that which the Gospel calls love."

Let us compare this passage with the following lines from Heine's *Reisebilder:* —

"Alas! one ought in truth to write against no one in this world. Each of us is sick enough in this great lazaretto; and many a polemical writing reminds me of a revolting quarrel, in a little hospital at

Cracow, of which I chanced to be a witness, and where it was horrible to hear how the patients mockingly reproached each other with their infirmities; how one who was wasted by consumption jeered at another who was bloated by dropsy; how one laughed at another's cancer in the nose, and this one again at his neighbor's lockjaw or squint, until at last the delirious fever-patient sprang out of bed and tore away the coverings from the wounded bodies of his companions, and nothing was to be seen but hideous misery and mutilation."

Neither of these passages could be called sentimental: there is nothing mawkish or bitter or sour in either of them. One is a poet's sketch, the other a philosopher's thought. But both are pessimistic; and, in both, pessimism pleads for kindliness and sympathy.

Schopenhauer, though of a shrinking disposition, cannot, we apprehend, be called a modest man. He was suspiciously fond of quoting Goethe's aphorism, "only wretches are modest"; though he may be right in thinking that it is impossible for a man superior to others not to be aware of his superiority, because "if the top of a tower is three hundred feet above its base, the base must be three hundred feet below the top. Whether you *look up* or *look down*, the distance is the same, and must look the same." *

"The thoughts of great thinkers," he says,† "suffer by being filtered through ordinary brains. Born behind the broad and lofty vaults of palatial foreheads, they lose their strength when sent to live in humbler dwellings, under the low roof of narrow, thick-walled skulls." Now Schopenhauer had a remarkably fine forehead himself; and whether anybody having more than an average forehead should allow himself to write such a passage, may well be questioned.

But these are unimportant traits, — small foibles of an otherwise great man. Nor should we revert once more to his philosophical errors, if his literary influence, which is still great in Germany, and which is not altogether confined to that country, had not been an excellent vehicle both for the truths and the fallacies of his philosophy. The following condensed summary of the latter may be useful to those who wish to give

* Die Welt als Wille und Vorstellung, Band II., p. 484.

† Ibidem, Band I., p. 26.

themselves up to the full enjoyment of Schopenhauer's works, without incurring the risk of imbibing false doctrines.

The first error of Schopenhauer consists in his having undertaken to build on Kant's Ontology what Kant himself either could not or would not build on it, namely, a system of metaphysics. He thus stood committed to both Idealism and metaphysics: that is to say, he had to assert that the world is phenomenal, that we know nothing but our own impressions, never the *Ding an sich;* and having pronounced this *Ding an sich* to be unknowable, he had to propound a speculative doctrine concerning it.

His second error was that he called the essence of all things Will, instead of calling it Reason or Wisdom, νοῦς or λόγος, and that, having proclaimed the Will to be aimless and lawless, he talks of an evidently progressive series of self-objectivations of the Will, so that the laws and forms of thought, the great logical and mathematical necessities which must have existed, either outside of or in the Will, from all eternity, are not at all accounted for.

All the incongruities to be found in Schopenhauer's system may be considered as results of these two fundamental errors. If we could suppose for a moment that Schopenhauer had admitted the Logos by the side of the "aimless Will," and had represented the world as the battle-field of these two contending and mutually complementary principles, all that he ever said about the Will would appear to us as perfectly correct. There is, from this point of view (though not from Schopenhauer's own), an immense deal of striking truth in this doctrine of a blind and restless agency manifesting itself in a world of blindness and restlessness, and therefore of suffering. It is quite undeniable that most sufferings (if not all) are directly or indirectly due to the various forms of self-love and self-assertion. From the untold miseries inflicted by the first Napoleon on millions of men down to the unseen cruelties described in Tom Hood's "Song of the Shirt," all were the work of ambition (which is self-assertion) and of vanity (which is self-love). And, although this is admitted, as a matter of course, by every man or woman, ambition and vanity continue to be nursed and fostered and stimulated in every imaginable manner. Even

school-children are no longer allowed to do their duty without becoming prize-fighters. Prizes, of course, are not *intended* to make them vain and mercenary. Nor need that be intended. For the restless, self-asserting Will is steadily at work within us from the cradle to the grave; and those who pray to God, Thy Will be done, can see no reason why they should not continue to do the behests of another Will, the repressing and deadening of which is the very essence of morality.

We should not forget to say a few words here on another kind of suffering, which is known to us under the name of *ennui*. Since nothing positive, but everything negative, can be predicated of Schopenhauer's First Principle, his "Will" is not only aimless, but *empty*. Therefore, the sufferings produced by the restlessness of that Will must be *either pain or ennui*. Schopenhauer says, humorously, that the former is represented by our working-days, the latter by our Sundays, and, he might have added, by the whole life of those whose week has seven Sundays. Vacuity craves filling; and *ennui*, or the mental *horror vacui*, becomes, like vanity and ambition, a real force or motive-power. Like vanity and ambition, it works good only in exceptional cases, its usual manifestations being love of pleasure, love of sights, love of strong emotions, love of change. Solitude and monotony of life are dreaded and abhorred.

But enough. We cannot help admitting that Schopenhauer's Ethics are remarkably good, considering the rottenness of their metaphysical foundation. Even his Pessimism has done some good in Germany, where the optimistic faith in the certainty of human progress had produced a dangerous degree of political apathy and religious indifference. Schopenhauer's Pessimism thus became a substitute for the pessimism of Christianity. Both agree in saying that the world is bad and wicked, and that the future is uncertain. And this uncertainty implies the necessity of an effort, according to Schopenhauer; the necessity of Divine intercession, according to Christianity. Fichte, too, had said that the world was bad, but the end was *sure* to be good, so that the necessity of moral effort could only be asserted, not proved; while Hegel's world was altogether good, because real, the reality of anything essentially

bad being irrational and as such impossible. From an educational point of view, these last two doctrines must appear more dangerous and less useful than Schopenhauer's, though Schopenhauer may be wrong for all that. Pessimistic philosophy is always a *contradictio in adjecto;* and the greatest objection to Schopenhauer's Pessimism will always be that, if it teaches us how to kill the evil, it also kills the killer, and good and evil die the same death.

Schopenhauer could never have founded a *school* on such a faith. He has had many readers and many admirers, but hardly any follower or disciple. Hartmann and Frauenstädt are the only philosophers of note in Germany who call Schopenhauer their master. But neither of them has accepted his doctrine *in toto*. And we may say of this philosophy what Hegel quoted with reference to other philosophies, "The feet of them which shall carry thee out are at the door."

Schopenhauer's greatest merit, which is independent of his success and of the truth of his doctrines, consists in his having remained faithful to speculative philosophy at a time when the reign of philosophy had passed away. He outlived all his rivals, and his mental solitude was even greater in his old age than it had been in his youth. Like a promontory forming the last link of a long chain of lofty mountains, he stands alone in the low though fertile plain of science and of positivism. The horizon may appear flat just now; but other mountains are ahead, and they will heave in sight as time wears on.

Those who believe that Schopenhauer has been the last of the metaphysicians seem to expect too much from that new discipline called Positive Philosophy, which is neither positive nor a philosophy, since it mistakes knowledge for truth and induction for thinking. It is easy to say, as Newton did, "Physicists, beware of metaphysics." The boy who was beaten by the schoolmaster for always talking in hexameters, cried,

"Desine, præceptor, posthac non carmina fundam."

His very vow belied his penitence, and his promise not to sin was itself a new sin. When scientific men say they will hear no more of metaphysics, and yet aspire to something higher

than formal logic and dry learning, or knowledge of names and facts, they deceive themselves and others. The human mind will never give up, though it may hush, its metaphysical cravings.

Speculation may be an idle occupation. But so is art and so is poetry. Yet art and poetry will not be given up as useless, any more than philosophy or religion, though they may all be ignored by those who have no time for them, their whole attention being absorbed either by the frivolities of social life or by the exigencies of some serious pursuit. We admit that the philosopher of the future ought to be a scientific man and, if possible, a mathematician, — a man, at any rate, brought up under the chastening and sobering influences of modern science. But he must be a man who knows how to *handle* results, not only how to find them and to label them. Science is not a building-ground, but a mere brick-yard. Its results are building-stones, not buildings; and even mathematics and formal logic are scaffoldings rather than houses. Who can build without stones or without scaffoldings and plumb-lines? But the bricklayers and the carpenters ought to know what they are before they aspire to be builders and masters, and ought to become conscious that they belong to the very lowest grade in that lodge of Freemasonry whose masters are to build a temple greater than Solomon's. In the mean time, it may be highly desirable that the brick-yard should be left undisturbed by metaphysical intruders. Philosophy can afford to wait until science shows signs of fatigue or distress. Nay, more, science has the strongest claims on our gratitude and admiration. If it has led to nothing better than Agnosticism (which, after all, is an improvement on Atheism and Materialism); if it denies the existence and, *a fortiori*, the immortality of the soul; and if it has reduced morality to a mere system of social dynamics, — we ought, the more readily, to acknowledge our obligation to co-operate with those fearless and sagacious workers who obtained these results, and whose greatest wrong does not lie in these results, but in the presumption of their finality. Many of those who profess these doctrines are men of warm hearts and open minds, men who would be metaphysical enough to die for their country, and to

own allegiance to all that, according to their lights, is good and beautiful and true. But it still remains to be seen how long mankind could abide by those doctrines without impairing this allegiance, and whether human society would be possible or individual life worth having, if that allegiance could ever, for any length of time, be forgotten or disowned.

E. GRYZANOVSKI.

ART. III. — THE PROPOSED CHANGES IN THE TELEGRAPHIC SYSTEM.

THE present age has witnessed greater changes in the habits of the people, and the methods of transacting business, than many previous generations. This is mainly due to the accumulation of wealth in the nation, which has probably been greater within the last twenty years than in all its previous history, and to the increase and wide dispersion of its population. There is, undoubtedly, more wealth and comfort, especially among the laboring classes, than at any previous era, but the tendency is to heap up enormous wealth and power in a few hands and in large corporations. While we do not believe that the poor are growing poorer, we do think the rich are growing richer, and that the disparity between the two classes is continually increasing. A few firms in the large cities transact the largest part of the business in each, where formerly a much smaller amount was divided among ten times as many firms. Two or three large manufacturing companies employ more hands and capital than did all our factories combined thirty years ago; while a few large railroad and coal-mining companies control the anthracite coal mines, and set the price of one half the coal mined in this country. The same tendency is noticed in England and on the Continent of Europe. Mr. Gladstone has said that England has accumulated greater wealth in fifty years than in the previous eighteen hundred, and more in the last twenty than in the preceding thirty years. The evil effects of this tendency are less felt abroad, since along with this increase of wealth the influence of the laboring

classes has been steadily progressing, and they are now felt as a power, where fifty years ago their opinions were disregarded, and their existence was scarcely taken into consideration in the calculations of politicians. The laborer, in Europe, is gradually becoming of consequence and more independent. The political character of our people is changing. We are becoming more cosmopolitan. State boundaries and State rights are less and less regarded, while the necessities and interests of the people all tend towards forming a nationality.

This accumulation of wealth and dispersion of the population are due in a greater degree to the introduction of steam and the telegraph than to any other causes. By these agencies remote places are brought closer together than were formerly neighboring towns. Europe is nearer New York than was Boston thirty years ago. Transactions with China and Japan formerly required a year for their fulfilment; now the order is given and accepted in a day, and filled in less than three months. Most of the large sales of cotton and wheat are made by telegraph, and millions of money are annually transferred by the same instrumentality, thus multiplying many times the working-power of capital.

The prosperity and growth of city and country, of farmer and manufacturer, of merchant and customer, depend on the means of intercommunication. The market is generally far removed from the producer or factory, and the necessity for increased facility of intercommunication is the one great cause of consolidation in our country. Without it we should be a mere confederacy, and no nation. This necessity has led to the organization of a new class of corporations required by the necessities of the times and the growth of the country, which could not exist in any other nation, or have arisen at any other period of history. Their power is felt in the marts of trade, by the press, and in legislative assemblies, controlling legislation at the Federal and State capitals. This influence arises from the concentration of wealth in these companies, the large number of their employees, and from the great ability of their officers. They grow in power and influence daily. The benefits which the people have received from them have been so great that the power they have insensibly gained has not been generally un-

derstood, while in many cases their interests and those of the people have been identical. Yet these corporations have steadily pursued a policy which has best subserved either their own interests or that of their managers, — the interests of the people being secondary and often entirely disregarded. The farmer at the West already complains that the only use he can make of his corn is to burn it for fuel; that no matter what the prices at the seaboard are, the freights only rise and fall in such a way that the result to him is the same. It is in vain to hope that such evils will remedy themselves, or that these corporations will voluntarily surrender any powers they have acquired, or limit their rates by any other rule than the largest amount they can exact. The time will come, and that soon, if this policy is continued, when the people will rise in their might and crush these monopolies. It is necessary that the good men of both political parties, for all are directly or indirectly interested, should take steps to correct the evil in these corporations, that they may be reformed rather than destroyed. Stockholders and officers do not or will not understand their true relations to the public. They seem to think that their franchises were granted by the State solely for their own benefit, and that they can use these trusts in the same way they would a charter for a strictly private corporation, as a cotton or woollen mill. They forget that these are not private, but public corporations which have received certain privileges from the State, in consideration of their promise to perform certain duties to the public in return. Just so far as they regard this accountability, and only so far, do they subserve the interests of the people, and the prime object for which their charters were granted. If this responsibility were continually borne in mind by the officers of these corporations, and acted upon, their relations with the public would be very different from those which now exist. The rights of stockholders in public corporations are secondary, and are not entitled to the same consideration as the rights of the public. But the stockholders control the affairs, and all the officers are chosen to care for those interests exclusively, and see that they do not suffer. The public have no representative, and their rights are often overlooked or disregarded. Now, while it is vain to expect any

progress unless capital is protected, it is as necessary that the welfare of the people should also be cared for; the interests of both must be conserved, for if the rights of either are sacrificed, they will ultimately be avenged.

The two great interests which, within the memory of even the young, have assumed such controlling power are the railroad and the telegraph. Railroads were the first to begin to be powerful, and they were fairly under way when the first line of telegraph was constructed. Similar evils have been experienced, and similar benefits conferred by each of these wonderful inventions. Many small corporations were originally organized which constructed lines through their own neighborhood; then, by combinations and consolidations, they extended their powers, until now the whole country is covered by a network of rails and wires, which are controlled by very few men. One instance of the growth of a railroad corporation will illustrate the process.

The line between Albany and Buffalo was originally owned by eight or ten different companies, their stock and indebtedness representing only the actual cost of the road. These companies were by degrees merged into one, the capital stock and bonded debt was very largely increased, and the convenience of the public greatly promoted. The gain to the corporations was immense, by the saving of expense through a single management, and by great stock and bond dividends. If there had been no more stock dividends the evils would have ceased, and the rates for passengers and freight would have been reduced long ago; for the increase of business would have enabled the officers to make a great reduction of rates without any reduction of dividends; but just as rapidly as the business and profits increased, the stock dividends increased, until that company, which was originally represented by fifteen or twenty millions of capital and debt, is now represented by nearly one hundred millions. The fictitious capital, it is said, amounts to $110,145 per mile for the whole length of the main line, upon which large annual dividends are declared, and which is worth its par value in the market. This sum does not represent money actually paid in by the stockholders, but money extorted from the people by unnecessary and exor-

bitant rates. The same parties who control this line of railroad subsequently acquired possession of the Hudson River Railroad, and other roads running from Buffalo around the Lakes, and stretching across to Chicago; and being still eager for more, they have reached out until they control the Union Pacific Railroad, its roads traversing thousands of miles, and its capital amounting to hundreds of millions. We have not selected this line because its capital is more inflated than others, or because its managers are more censurable, but simply as illustrating the tendency of corporate power. The stockholders and directors are not alone responsible for these evils, for the public has witnessed this steady growth, has participated in the benefits of these consolidations, and has ratified and approved them by silence. It is time that a change in the policy of these corporations should be made, that the rights and interests of the people should be recognized; and if the corporations will not begin it, the legislators must, or the evils will become intolerable.

But vast as the railroad power has become, and oppressively as it is exercised, it is not yet absolutely unchecked; for competing lines connect the East and West, and their managers are constructing the Northern Pacific and the Texas Pacific Roads, stretching out to the Golden Gate and the commerce of the Pacific Ocean. A trial of strength, like the war of the giants, may arise between these rival roads, and lower rates may for a time be obtained, to the great benefit of the people. Two new lines of travel from the Atlantic will soon be opened to the Mississippi River, which may bring some alleviation.

The attention of the public is aroused to the importance of the subject. In Massachusetts, Mr. C. F. Adams, Jr., has given to it the best consideration of one of the most thoughtful minds of a State prolific in great men, and has proposed a novel remedy, which we trust will soon be tried in Massachusetts. In the Senate of the United States, a standing committee, with Mr. Windom, of Minnesota, at its head, — a man of excellent judgment, cool and discriminating in his views, — has been organized to consider this subject in its national relations, and others of our able men in the Senate and House and throughout the land are striving to solve the problem. Organ-

izations have been recently formed in some of the Western States which portend only evil to these corporations, and possibly to capital as well.

The history of the telegraph shows a similar growth, but offers no hope of relief through competition. The first telegraphic line was built at the expense of the government; but the benefits of the experiment, which became a success, were reaped by the projectors. As soon as the line between New York and Washington was constructed, companies were organized in all parts of the country to build lines between the large cities. The actual outlay required for their construction was small; the nominal capital and the expectation of profits were large, and entirely disproportioned to the cost of construction; one half of the capital stock being generally set apart for the owners of the patent through whose instrumentality the lines were built. These lines were constructed of poor materials, in the cheapest manner, the constructors and managers having little knowledge of the principles on which telegraph lines should be built and operated. The rates were low, business small, and expenses high. The correspondence was limited, and the expenses greatly increased by the large number of short lines owned by different corporations, each with its own set of officers, operators, and repair hands, as every message had to be repeated at the end of each line. This led to detentions, inaccuracies, and irresponsibility. As if these evils were not enough, the patentees and owners of the three patents of Morse, House, and Bain constructed competing lines between the large cities. A few of these companies, from peculiarly favorable circumstances, made money; but failure was the inevitable fate of the great majority; for they served neither the interests of stockholders nor of the public. There were ten times as many companies as at present, with scarcely one tenth the number of miles of wire, or one tenth the business. Many of the rates were lower than they have been at any subsequent period; one time only ten cents being charged between Boston and New York.

In the struggle, the weaker lines were gradually swallowed up by the stronger, of which the principal were the Western Union Telegraph Company in the West, and the American

Telegraph Company in the East. Their managers became conscious of the inherent evils of a system formed of segregated and competing lines, and saw the necessity of a change of plans and concert of action. The Western Union Company occupied the territory from New York west to the Pacific Ocean, with the exception of four or five States, where two allied companies maintained an independent existence. The American Telegraph Company controlled the sea-coast and cotton States. These companies formed an alliance offensive and defensive, and seemed to be all powerful, and the era of prosperity for the stockholders and increased rates for the people began.

A short history of the Western Union Company will illustrate the rise of these corporations. It was incorporated in the year 1851; but it paid no dividends until the year 1858, the profits being used in extensions, and purchase of other lines, and, it is said, in the purchase of the stock of parties who had become tired of waiting for dividends, either directly, or by loaning money on the stock purchased. Then the few remaining stockholders began to reap the fruits of their self-denial in a very rapid increase of the capital.

In 1858 its capital stock was			$ 385,700.00
Subsequently, stock was issued for the following purposes:			
1858 – 1866.	For cash at different times		167,200.00
	For bonds and fractions of stock dividends		146,600.00
	For other objects		182,053.55
	For stock dividends		17,810,146.45
	For lines purchased		3,322,000.00
January 6, 1866.	Total capital		$ 22,013,700.00
[In 1866 it swallowed the two other principal lines, — the American Telegraph Company, occupying the Eastern States and the seaboard route South, and the United States Telegraph Company, a new line, competing with both the Western Union and the American Telegraph.]			
1866.	Stock for United States Telegraph Company and United States Pacific Telegraph Company		$ 7,216,300.00
	Stock for American Telegraph Company	$ 3,833,100	
	For dividends to American Telegraph Company	8,000,000	11,833,100.00
1869.	Total capital		$ 41,063,100.00

1866 – 1872. Net earnings from July 1, 1866 to July 1, 1872, $17,116,694.00

These earnings average 7 per cent a year, divided as follows: —

Dividends	$4,856,879.34	
Interest and sinking fund .	1,898,401.98	
Sundries, etc. . . .	10,361,412.91	$17,116,694.23

STOCK AND CASH DIVIDENDS FROM 1858 TO 1866.

Date.	Per cent.	Capital on which dividend was paid.	Amount of dividend
April 22, 1858	414.40	$385,700.00	$1,598,300.00
January 16, 1862	27.20	2,349,500.00	640,446.65
March 15, 1863	100.00	2,979,300.00	2,979,300.00
December 22, 1863	33⅓	5,962,600.00	1,988,100.00
May 11, 1864	100.00	10,066,900.00	10,066,900.00
April, 1866	25.00	21,484,400.00	537,100.00
Total stock dividends in eight years . . .			$17,810,146.65
Total cash dividends in eight years . . .			4,157,242.00
Total dividends			$21,967,388.00
Annual average			$2,745,922.00
On a capital of			$385,700.00

Besides all this increase of capital, a bonded debt of $5,198,295 was incurred in the purchase of the Russian Extension Telegraph and other lines. In the years 1864 – 65 Mr. Collins, on behalf of himself and other stockholders in the Western Union, began to build an overland line to Europe by Behring Straits and Siberia. The work was begun without adequate knowledge of the difficulties to be encountered, through a barren, mountainous country, inhabited only by a few Indians and wild animals, with an almost polar climate; and the attempt encountered unexpected difficulties. It was well under way when its necessity was superseded by the laying of the Atlantic cable. If it had succeeded, the separate organization would have been continued for the benefit of the corporators; as it was a failure, the loss was thrown upon the people, and the bonds of the Western Union Telegraph Company were issued for $2,500,000, — a sum supposed to be equal to the entire loss. This system was for a time a great financial success; but it served the stockholders much better than

the public. Much of the correspondence required to be transmitted over the lines of several companies, necessitating repetitions, inaccuracies, and delays. If the customer complained, it was impossible to determine which company was responsible for any error or delay, and he was left without redress. The elements of a national system were lacking. The companies themselves were sensible of the inherent defects, and efforts were made at different times to effect a union of the large companies, but without success.

In 1864 the United States Telegraph Company was organized, with its head-quarters at New York, for the purpose of establishing a national company, with wires extending north and south, from Maine to Mexico, and from the Atlantic to the Pacific. It was the first company started on a broad basis, and provided for the economical, prompt, and accurate transmission of all telegraphic correspondence. With capital, skill, and time, its success was assessed at the expense of the other companies.

The Western Union and American Telegraph Companies realized the power of this new rival even more fully than did its originators; for they knew its strength and their own weakness.

The new company soon began to pay dividends, supposed to be from earnings, but in reality from capital. Both of the old companies made overtures to it: the Western Union was successful in its negotiations, by offering many times its cost or value.

It was merged into that company in 1866, each stockholder receiving two shares of stock in that company for every three of the other, which required an issue of $7,000,000 of stock for the purchase "of a few thousand miles of almost worthless lines."

This forced the American Telegraph Company into a consolidation with the Western Union, which immediately followed the other. Its capital stock of $4,000,000 was exchanged for $12,000,000 of stock of the Western Union to equalize the nominal value of the two. The Western Union system thereby became national.

It is often said that, as competing lines can be constructed

at a small expense, the public have a remedy for any evils belonging to the present system in their own power.

This suggestion has even been made by officers and stockholders of the Western Union Telegraph Company. The results of past experience show the entire fallacy of such a remedy. Telegraph correspondence, like the mail service, is with all sections of the Union, and no company can be successful that is not national.

In this respect it is entirely unlike our railroad service, where a small local road may pay large profits, and serve its immediate constituency better than a large company could.

The recent history of opposition companies confirms these views.

At the close of the war this company required the aid of the government in recovering and establishing its lines upon the railroads of the South. It therefore procured the passage of an act of Congress in 1866, which gave it the right to construct, operate, and maintain lines of telegraph upon all the post roads of the country. Foreseeing that the time might come when it would desire to sell its lines to the government, a provision was inserted in the bill that Congress should have the right to take them at any time after 1871 at an appraised valuation. The Western Union Telegraph Company was now for the first time without a competitor, and was apparently secure. But its lines were poorly constructed and equipped, and but little business could be transacted upon them in comparison with the same length of European lines. According to a report made by Mr. Cromwell Varley, an experienced electrician, who came over from England in 1868 to examine their lines, the insulation was scarcely *one tenth* as good as that of the English lines, and "it is the favorable climate which permits such insulation to pay." In conclusion, he said: "Your insulation is horrible in wet weather, and getting worse. Take in hand those lines which earn most of your money,— the Boston and Washington wires, for example,— reinsulate *one half* or *one third* of these wires, and I expect you will find them sufficient for your present traffic."

At this time the corporation was in a critical condition; its lines were poor, and its capital out of all proportion to its prop-

erty or business. With the same capital it now has, it then had less than one half its present length of wire or business. Its rates were nearly twice as high, the average being $1.40. It could easily have been fatally crippled by rival lines, if parties who had the means and the skill, and who were willing to look for their profit to the investment, had constructed them.

New rivals entered into the field; but they all inherited the errors of the Western Union, and were started on wrong principles, with capitals even larger in proportion to the length of their lines or their business. In one of these companies each mile of wire was represented by $800 of capital, while the cost was probably not much over $100. The principal of these were the Franklin, Atlantic and Pacific, the Pacific and Atlantic, the Bankers and Brokers', and one or two other smaller associations. Competition was renewed, rates were reduced, dividends fell off, and, according to the assertions of the Western Union Telegraph Company, "These competing lines have not made money enough to keep their lines in repair." They have never paid any dividends, and their stock, it is said, has no market value. Combination naturally followed. When a business, from requiring large capital or other circumstances, falls into the hands of a few persons, they are sure, in the end, to avoid competition by combining. Hence, it is said with truth that "where combination is possible, there competition is impossible." Accordingly, the President of one of these companies has recently testified that he had agreed with the Western Union Telegraph Company to raise the rates, thus putting an end to competition. This result may have been brought about in consequence of large stockholders in the Western Union Telegraph Company having become interested in the other lines. The business, therefore, is now controlled by the Western Union Company, which performs nine tenths of it. The management of this company has not been retained in the hands of its original stockholders, nor is it controlled by those who have invested in telegraph stock solely with a view to profit by the development of its business, but by the same parties that operate the New York Central line of railroads, — a combination which wields the most extensive railroad and telegraph systems in the world. This statement does

not represent the full extent of its power. A great change has taken place in the Western Union Company's affairs since its office was removed to New York, and Messrs. Orton and Palmer became President and Treasurer, and the engrossing policy then begun has been pushed with all their sagacity and energy. No dividends have been paid recently, nor will any be for some time to come. The profits have been applied to the repair, extension, reconstruction of the old, and to the construction of new lines, and in the purchase of the stock of the Company. The stock so purchased has not been cancelled, but has been transferred to the company, to be sold or divided at some future time. Concessions have been made in the rates, the business has doubled, the lines have been improved, the great disproportion between the value of the property, its business, and its capital has been to a considerable extent removed. Competition has ceased and can never be renewed. The results appear in the market value of the property, which in January, 1869, was $33 per share, and in January, 1873, $85, and is cheaper at $85 than it was in 1869 at $33 per share.

What is the effect of this monopoly, with its inflated capital, upon the rates and growth of business? According to the Company's published statements, its average rates in 1868 were $1.10; in 1869, 97 cents; in 1870, 83 cents; in 1871, $73\frac{4}{10}$ cents; in 1872, 72 cents. The Company has earned upon its nominal capital during this time an average of six and a half per cent a year. If the capital represented the cost of the property, the rates might have been reduced one third and still have yielded six and a half per cent upon it. The public pay, therefore, nearly $3,000,000 a year on fictitious capital. The growth of the business is indicated by the number of messages transmitted during each of these years, namely:—

	Rate.	Messages		Rate.	Messages.
In 1868,	$ 1.10	5,733,394	In 1871,	$.73\frac{4}{10}$	9,115,010
1869,	.97	6,548,465	1872,	.72	10,271,935
1870,	.83	7,859,028			

being an increase of eighty per cent.

This increase, large as it seems, is entirely disproportionate to the growth of either the railroad or the mercantile business of the country, and is less than that in other countries.

Belgium affords a striking contrast to America in the policy pursued and in the results obtained. In the year 1862, 105,278 messages were transmitted, at one and a half francs. In 1863 the rates were reduced to one franc, and the business increased to 188,825, or eighty per cent. In 1865 the number was 332,718. On the 1st of December the rates were reduced to half a franc, and the next year 692,536 messages were transmitted. The business has continued to increase in nearly the same ratio, and in 1871, 1,560,673 messages were transmitted, giving an increase of five hundred per cent in six years. The number of messages is one fifteenth of the number of letters. This diminution of rates was followed by a reduction of the net profits, but in no year have the expenses exceeded the receipts, and the net profits are again increasing. The net earnings have paid the entire debt incurred in the construction and extension of the lines. The reduction of rates was not only followed by an increase of business, but by extending the use of the telegraph to all classes of people. At the high tariff seventy-seven per cent was on commercial matters, while now thirty-eight per cent only is of that class, although the number has greatly increased; thirteen per cent was then on social matters, now fifty-eight per cent.

The Republic of Switzerland soon followed the example of Belgium. On the 1st of January, 1868, the rates were reduced one half, and the correspondence, which had been increasing at the rate of only four per cent a year, nearly doubled at once. The number of messages transmitted in 1867 was 397,289; in 1868, 798,186; and in 1871, 1,700,000. If as many telegrams were sent in this country as in Belgium in proportion to the correspondence, there would be about forty millions a year. If as many in proportion to the population as are transmitted in Switzerland, there would be nearly thirty millions.

It is said that those examples do not apply to our country, and that it does not follow that because they use the telegraph extensively, we should do so if our rates were greatly reduced. The theory of the Western Union Telegraph Company is that the business depends more upon the despatch obtained than upon the rates; that the question of cost does not enter into the consideration of its customers so much as that of time;

and that greater promptness in transmission is demanded, rather than lower rates. There is no doubt that this is true under the present circumstances. The rates are exorbitant and prohibitory of many kinds of business, ten per cent only being on social matters. The experiment of low rates has never been tried in this country, excepting between two or three large cities in the East, and the results there have never been published. With a reduction of rates the character of the business would be changed, the number of customers and messages would be greatly increased, and similar results be obtained here as abroad. European statistics show that with high rates the telegraph was used even less than with us, and solely for commercial purposes, and that it is the reduced rates that have increased the business. The effect would be much greater here, because the value of the telegraph depends upon the time gained in the transmission of correspondence. If in Belgium, where there is only a gain of an hour's time, the growth of business by the reduction has been fifteen hundred per cent in ten years, the effect would be greater in this country, where the gain in time is from one hour to ten days.

While it is true as a general rule that the growth of the telegraphic correspondence is so great that the net receipts will be diminished by any reduction of tariff, yet it is also true that any considerable reduction of rates will greatly increase the business without a corresponding increase of expenditures. European and American statistics both establish this proposition. Striking and instructive results are afforded by a comparison of the statistics of North Germany, Belgium, Holland, and Denmark for the years 1865 and 1870. In North Germany the increase in the number of messages was 259 per cent, increase of expenditures only 83 per cent; the expenses increasing only one third as rapidly as the business. In Belgium the increase of messages was 252 per cent; of expenditures, 61 per cent; the expenses increasing one fourth as rapidly as the business. Increase of messages in Holland, 142 per cent; of expenditures, 62 per cent, or one half as great as the business. In Denmark the increase of messages was 149 per cent; of expenditures, 38 per cent, or only one fourth as great. The same is true of the Electric and International Tel-

egraph Company, the largest English company, which in four years, from 1862 to 1866, increased its business nearly 105 per cent, while its working expenses were only increased 40 per cent, and the net product 80 per cent. The statistics of the Western Union show the same results, the business having increased in five years 80 per cent, with only 27 per cent increase of the expenses, and a reduction of only one per cent in the net profits. It is therefore shown that a reduction of fifty per cent in the rates will be followed by an immediate increase in the business of about one hundred per cent, with an increased expenditure of about one third, and that this immense development of the business and of benefit to the public may be gained without much, if any, reduction of the net profits. But corporations will not make reductions in rates simply for the public benefit. It is more difficult, and requires greater executive ability, to manage a large business with small profits on each item than to conduct a small business with large profits. It is in this that the difference between a corporate and a postal service consists. The first looks only to realizing the largest profits, and regulates its facilities and extends its business with that view only, the public service being but the accessory. The other seeks the greatest extension of the business which can be made without loss, the public service being the chief object.

It is thus shown that the use of the telegraph has increased rapidly abroad and slowly with us, when the very reverse ought to be true. Scarcely any new lines are constructed there, while here new territory is peopled, and an average of over twenty thousand miles of wire are added yearly to our lines. Our habits, business, social condition, national energy, and extended territory, all favor a much more rapid increase in the use of the telegraph here than abroad. The contrary result can only be due to the fact that the business is managed in the interests of monopoly. Where the telegraph is managed by the government, the interests of the people are better regarded; the rates are the lowest, the facilities the greatest, and this is obtained without the imposition of any tax, those who use the telegraph paying for it. These effects are due to the different systems in operation, — in one the corporate, in the other the postal.

The different theories of these systems have been very fully set forth in a recent work, published by Sir James Anderson, entitled "Statistics of the Telegraph." In this he enunciates several propositions, which are the key to the whole matter. First, that the normal growth of the telegraph is so rapid that the net earnings, at a high rate, will be greater than at any reduced rate. Second, that a reduction of tariff for interior traffic has in nearly every instance produced an enormous increase of traffic, with only a slight decrease of the net product, and that this deficit tends to diminish. Third, that the only reason that can possibly induce the directors of corporate companies to reduce their tariff is the single one of expediency. The first two propositions he proves by the Belgian and Atlantic cable statistics. The Belgian statistics show that if there had been no reduction of rates during a period of nineteen years, there would have been a much larger net product, while the business would have shown a very small increase. Only 264,504 telegrams would have been transmitted in 1869, instead of 1,534,413, the number actually exchanged, while the net product for the same year would have been 502,000 francs against 23,856 francs. The history of the Atlantic Telegraph shows that if the average rate, £ 12.84, for the first eleven months had been continued, the net result would have been an annual dividend at the present time of twenty-seven per cent a year instead of ten or twelve per cent, while the number of messages sent would have been 114 a day against 860. The third rule has been faithfully carried out in the American system; high, irregular, and arbitrary rates preventing the use of the telegraph unless in exceptional cases, where the cost is of slight consequence. Though the rates have been reduced about thirty-three per cent within the last five years, no general reduction has been made. It has been limited to particular cases, where the rates were so high as to be almost prohibitory.

Mr. Wells, in a pamphlet lately published by the Western Union Telegraph Company entitled "The Relation of the Government to the Telegraph," says that the reduction caused by the introduction of a system of charges according to the air-line distances between country places instead of by the route

actually traversed by the wires resulted in a loss equal to fifteen per cent, while the introduction of half-rate messages by night was followed by another reduction in the net receipts equal to sixteen per cent in the rates, and thus he accounts for the entire reduction. In Europe, every nation has adopted either uniform rates, or uniform rates for equal distances.

The appropriation of the lines of telegraph by the general government has been recently the subject of discussion both in England and America. The same system prevailed in each, — high rates, limited facilities, and small growth. The contrast between the governmental and corporate systems in England and on the Continent was felt by the English, and led to the purchase of all the lines of telegraph by the government in 1870. The business had increased under corporate management from six millions in 1866 to eight millions in 1868, or fifteen per cent a year. Though the British government reduced the rates but one third, the increase was one hundred per cent in three years, with a great increase in the number of offices, against an increase of eighty per cent in five years in our own country. These results have necessarily attracted much attention in our own country. The Western Union Telegraph Company have been forced to consider them, and have recently employed the ablest statistician of our own country, the Hon. David A. Wells, to examine the European and their own statistics, to deduce from them his own conclusions. So short a time, however, was allowed to Mr. Wells, that his examination was limited, and his research does not carry the conviction due to his eminent talent and fairness of mind.

The arguments advanced in favor of a change of our system of telegraph are drawn from the high, arbitrary, and discriminating rates charged to the public, the limited facilities furnished, and the little use made of the telegraph, and the great power it confers upon a monopoly. During the past winter, and while the discussion in Congress was pending, a great reduction of rates was announced, which was intended as a concession to the public demand for low rates. The reduction, although apparently very great, gave no relief to the people, for it was not a general reduction, but a simple lowering of all rates above $2.50 to that sum, and of some rates of $2.50 to

$2.00. The people cannot afford to pay either of these sums for ordinary business or social correspondence. A reduction, to be of public value, must be so great as to induce people to use the telegraph regularly where they now use it occasionally, and to increase its use by those who now use it in their regular business.

The Western Union Telegraph Company divide the country into three districts, — the Eastern, Central and Western, and Southern. In the East the rates are thirty cents for over twenty-five miles, and not over fifty miles; in the Central and Western division, forty-five cents for the same distance; and in the Southern division, fifty cents. That these rates are high is evident when we compare them with the Belgian or English rates, which are respectively ten cents and twenty-five cents for the same distances; double the number of words being transmitted in England, and one half as many more in Belgium, thus increasing the disparity; and that they are as high as between our principal cities where the distance is from five to eight times as great. These rates are so high as to prohibit all business between country places excepting that which the parties are compelled to send, and which they would send at even greater rates.

There is one exception to the high charges of the Western Union Telegraph Company. They boast that the rates to the press are lower than in any other part of the world; "that they deliver to the press of the United States annually, for less than a million of dollars in currency, more telegraphic matter than is transmitted by all the other telegraphs in the world"; and Mr. Orton has said that "he would undertake to produce an American journal, printed one thousand miles from the Atlantic coast, that should contain more news from all parts of the world in a single issue than could be gleaned from the 'London Times' in a week," and that "the press are perfectly satisfied with the situation." A statement of the arrangement by which the press obtains these low rates will show that in one point of view the press pays very dearly for them. The Associated Press of New York, in connection with the Western Union Telegraph Company, collect the news from Europe, and from all parts of our own country, forward it to some conven-

ient centre for collation, preparation, and distribution, and then transmit it to the various press associations in all portions of the country. These associations are therefore dependent upon this double-headed monopoly formed by the Telegraph Company and the Associated Press of New York. No new associates are admitted into any press association without the assent of every other member. The news is delivered under an expressed or implied engagement that the receivers shall neither encourage nor support any other telegraph corporation; that they will protect its interests, and will not criticise the telegraphic news. Thus an offensive and defensive alliance is organized for the protection of the telegraph company on the one hand, and of the Associated Press on the other, by which, in effect, that press is subsidized. The Western Union Telegraph Company can afford to furnish news at low rates, to have the support of the press in its extortions upon the whole people; and the associations pay for this by defending the power which sustains their exclusive privilege of furnishing news to the public. The arrangement which Mr. Orton boasts of is therefore simply a combination to victimize the public; for the sake of which the Associated Press sacrifices its character and independence.

From time to time members of the press have advocated a postal telegraph, or have criticised the telegraphic reports, but they have quickly felt the power of the telegraph company, and their fate has proved a sufficient warning to others not to offend in like manner. The most noted are the "Herald" and "Alta California," both of San Francisco, and the "Petersburg Index," of Virginia. The California papers, the one in 1868, and the other in 1872–73, offended by advocating a reform in the telegraph service. They were promptly punished, — the "Herald" by having the rates raised from six to fifteen cents per word, and the "Alta" by the entire loss of the despatches. The telegraph company assign as the reason for cutting off the "Alta" that they had great difficulty in collecting their bills. The Petersburg paper criticised the reports, and for a time lost its despatches. The telegraph company can raise or reduce the rates; and though they make contracts with the various associations, they are generally terminable at thirty days' notice.

Its control over the press is therefore absolute. It has the power of life and death, for the telegraphic news is the vital breath of the daily newspaper. Such a power cannot exist without its exerting a pernicious influence on public affairs, and every observant public man has long perceived the demoralizing influence of this powerful, but subtle agency.

Let us consider the power of the telegraph as an educator of the people. The current history of the times is first given to the country through the telegraph. "Let me write the songs of the people, and I care not who makes the laws," is an old saying. Here it would be truer, if less poetical, to say that the man who rules the Associated Press is master of the situation; for, if he has the ability to wield it, he has an instrument for shaping the opinions of the millions, which, by the constancy, universality, and rapidity of its action, defies competition. The events which take place in all business, political, and religious centres, together with the actions of public men and their imputed motives, are all presented simultaneously to the public, from ocean to ocean, through this instrumentality. The agents who collect the news respond to the central authority at New York, and are subject to removal at its pleasure. Here is a power greater than any ever wielded by the French Directory; because, in an era when public opinion is omnipotent, it can give, withhold, or color the information which shapes that opinion at its pleasure. It may impart an irresistible power to the caprice of an individual, and the reputation of the ablest and purest public man may be fatally tainted in every town and village on the continent by a midnight despatch. It is incompatible with public safety that such an exclusive power to speak to the whole public at the same moment upon every subject, and thus to create public opinion, should be under the absolute control of a corporation. The obstacles which the telegraph and these associations can throw in the way of any new journal amount to virtual prohibition against publishing a first-class, independent newspaper in the land, and thus the existing combination has possession of the exclusive privilege of making the first and, with many, the last impression of every event.

The abuses of this system are growing, and will increase

rapidly until the government interferes to perform the duties for which it was constituted, — to protect the people; until the rates for the press are fixed by law, equal rights and privileges secured to all, with rates so low that all can use the telegraph. Not until then will a free and independent press be assured to the country.

These suggestions show that the telegraph may become a controlling power in politics. It can ally itself — and probably will at no distant day — with kindred monopolies, and aspire to supreme power. Giving the word of command to the supporters of these vast interests, and having exclusive and simultaneous access to the public mind, such combinations may at critical moments seize the power of the government.

The telegraph should also be considered as a means of speculation. The entire commercial news of the European markets is daily gathered in England, transmitted to New York, and received about noon by the Commercial Bureau of the Western Union Telegraph Company. They tolerate no competition in this branch of their business, and allow no other party to receive and forward the commercial news to associations of merchants. As soon as it is received, all business upon the wires leading to the chief cities of the country is stopped until the news has been forwarded to its agents in each of these cities. Its agents, therefore, have the first information of all commercial as well as political news; and every one knows how sensitive are the markets. Is a report circulated that the Secretary of the Treasury proposes to issue more currency, stocks advance; that the Pacific Mail is to be investigated by a Congressional committee, they fall. It has been said by members of Congress that a careful examination will show that wherever the reporters favor a particular member or measure, his speeches and the arguments for such measure are carefully reported, to the neglect of their opponents. The control of the telegraph gives to its manager the ability to speculate, without the possibility of loss, in any article in every market of the world.

As it is idle to expose the evils of any system unless a remedy is suggested, let us inquire whether there be any in this matter.

The Constitution gives Congress the power to establish post-offices and post-roads. The object of this grant is to enable it to transmit correspondence. The manifest intention of the Constitution was to confer full power over the whole business of transmitting correspondence. Congress, having undertaken to exercise that power, established the offices and routes, and adopted each improvement in the means of transmission that was discovered, and ought now to adopt this latest and greatest improvement, the electric telegraph. It has not only exercised this power in all other forms, but has always asserted its *exclusive* right to carry on the business, and has punished severely all who carried outside of the mails letters upon which the postage had not been paid. The whole subject is essentially national, and the fact that it is expressly intrusted by the Constitution to the general government shows that it is not private, but public business. That the framers of the Constitution correctly understood its character is obvious on a slight consideration. If the transmission of the mails had been left to private parties, it would no doubt have been carried on between the larger cities and in populous districts; but unless the government had kept up lines of communication between the extremities of the territory, and even between country towns, there would have been no general postal system. In the populous regions the rates of postage would have been prohibitory of extensive correspondence, because the business would have fallen into the hands of the monopolists, as has been the case with the telegraph.

There are but two questions: First, whether it is for the interests of the people that the transmission of correspondence should be intrusted to the government rather than to private monopolists. Our forefathers in their wisdom decided in the affirmative, and gave Congress the conduct of the postal system, in order to secure responsibility and good service, knowing that, though there would be abuses, there would be less than if the people were left wholly to the only alternative, an irresponsible monopoly. Congress, in the exercise of the power conferred upon it, has already created post-offices and post-roads in all parts of the country, and the mails are carried to every village in our land. The free interchange of corre-

spondence is a modern necessity, and has kept pace with the advance of civilization and freedom. Exclusion from it is separation from the world, and, if it results from the imposition of unreasonable rates, is a denial of a right. This right of correspondence belongs to the people, and extends to all the modes of communication now in use or which may ever come into use.

Second, shall the telegraph, the greatest improvement for the rapid transmission of correspondence, be open to the people, or remain the peculiar property of the wealthy?

The telegraph is now recognized as an important vehicle for the transmission of correspondence, and, under legitimate control, will soon absorb a considerable portion of it. The government cannot, therefore, abdicate its control over this agency with any greater propriety than it can surrender that over correspondence by railroad or steamboat. All classes and every individual in the community are directly interested in the telegraph; it is of public concern, and not a mere private matter. It is a national business, which recognizes neither State boundaries nor sectional limits. No State legislation can properly regulate it; Congress alone possesses adequate power.

It is only an instrument for the transmission of correspondence which before its invention was sent by mail. The same organization which now furnishes the offices, keeps the accounts, receives and delivers all other letters, will suffice, with some increase in its force and efficiency, for the performance of the same business for the telegraphic correspondence. We are now maintaining two, and, in many places, three or four organizations for the same purpose, where one could perform the whole, and afford ampler facilities for telegraphic correspondence than are now provided, at an annual saving of between two and three millions of dollars. No one proposes to surrender the transmission of the entire correspondence to a corporate monopoly, or doubts what would be the results if these corporations controlled the charges for postage.

Two methods have been proposed for exercising this power and uniting the telegraph to the postal service. One, by the present Postmaster-General, which simply copies the European system, and provides for the reception and delivery by the

Post-Office Department of telegrams transmitted over lines constructed, owned, and operated by the Department at rates fixed by Congress. The other, proposed by a former Postmaster-General (Randall), provides that telegrams shall be received and distributed through the post-office as by the other system, and transmitted like other postal matter by parties owning and operating the lines, and contracting to perform the service at rates fixed by Congress. The two plans were submitted to standing committees of the Senate and House of Representatives of the last Congress, and after a full discussion, at which all parties interested were represented, the Postmaster-General advocating the government plan, Mr. Hubbard the postal system, Mr. Orton and other representatives of telegraph companies opposing any change, the committees considered the subject independently of each other, and were unanimous in their rejection of the plan of the Postmaster-General, and the adoption of the postal system advocated by Mr. Hubbard. These committees, in carefully prepared reports, submitted the measure to Congress. Owing to the want of time during the last session, the bills reported to the Senate and House were not considered; but it is understood that they will be acted upon at an early day in the next Congress. As the same advantages will be obtained by the public under either plan, and as the one will cost many millions of dollars, and increase the power and patronage of the Executive, no one will be surprised at the conclusions at which the committees arrived. The reduction in rates will be greater than that made in England, where an expenditure of forty millions of dollars was incurred in the purchase of the lines by the government; and the rates will be as low as they could be under a purely governmental system conducted without loss. By such an arrangement the government will take the same charge over the telegraphic branch of the postal service which it now exercises over communications transmitted by rail or post-coach, without investing in telegraphic lines any more than it does in railroads and post-coaches, and will as effectually guard the citizen against extortionate rates and unjust discriminations.

Various considerations are urged against the transfer of the telegraph to the Post-Office Department. Some think that the

country which is the least governed is the best, and that no business should be intrusted to the government which private enterprise can transact, because every government performs its work at a greater expense than corporations, and our government is more extravagant than any other. There is no doubt of the general truth of the first part of this proposition, and it can be carried further, for all corporate work costs more than private. Yet this fact does not prevent us from continually chartering new corporations, nor from intrusting certain duties to the government. Our education, banking, and postal system are conducted or regulated directly by the State and general governments. It does not solve the question to say that government work is more expensive than corporate, but we must consider *for whose benefit* is the greatest economy. Do the people share in the benefit, or does it enure wholly to the stockholders of the corporation? All experience shows that the same self-interest which impels a corporation to have its work done as cheaply as possible also leads it to get all it can out of the people. The statistics prove that telegraphic management in private hands *does not* result in either economy or efficiency of service to the public.

All the telegraphs on the Continent of Europe are owned and operated by the government. In England, before 1870, they were managed by private corporations, as they still are in America. The first cost of government works is less, the rates are much lower, the facilities offered greater, and they are planned on a comprehensive system, with reference to the wants of the whole country, and not alone to those places where it will pay best. The rates in the principal countries of Europe are less than one half those in England under the corporate system, or in America. The post-office is the only governmental work in this country in which the people are directly interested; the service it renders, in proportion to the facilities furnished, the work performed, and the distance of transmission, is cheaper than that of any other country in the world, and it will at least compare favorably with the express business. The cost on each letter is a little less than two cents in Great Britain, a little over three in the United States, while the number of letters in proportion to the offices is much less, and the

average distance of transmission more than three times as great.

But some who admit the evils of the present system and the advantages of a postal system think that by the transfer of the telegraph to the postal service the power of the Executive would be so greatly increased as to outweigh all the benefits that would result from it. All political influence arises either from the patronage it would give the Executive, the ability to send free telegrams, the control of the press, or the power of *espionnage* over the correspondence. As these powers are now held by a private corporation, the question is reduced to a consideration of the expediency of leaving them to private and irresponsible parties, of intrusting them to the Post-Office Department, or of limiting these powers and dividing them between private parties and the Post-Office Department, so as to secure the advantages of both systems. These objections apply with much greater force to the plan of the Postmaster-General, which provides for governmental ownership, operation, and control of the business, than to the postal system. Under it there will be no patronage, excepting that arising from the addition of a few clerks and carriers, less in number than the annual increase from the growth of business. The free transmission of messages by passes, so constantly given to members of Congress and others where they will "do the most good," is not only prohibited, but both the post-office and the company are directly interested to have every telegram fully paid, and neither can send a free despatch without the connivance of the other. There can be no control over the press, for all will have the *right* to send and receive despatches at fixed rates, and so low that every paper can obtain "specials" cheaper than they now get the Associated Press news.

Espionnage, or the power of the postmasters, dependants upon the Executive, to examine private telegraphic correspondence, is severely punished by law, and is to a great degree thwarted by the fact that the operators are employed and paid by the company, and without their connivance the power would be of little use; and, moreover, the number of telegrams will be so greatly increased by the low rates and additional facilities as to remove the possibility of any considerable tampering with their contents.

The postal system recognizes both the necessity of regulating the business and the importance of securing that economy which private interests impart. It restrains the powers, corrects abuses, reduces rates, increases facilities, confers no new powers on the Post-Office Department, but simply extends its operations by the employment of a new agency for the transmission of correspondence. It provides for the purchase of all existing lines at an appraised valuation, their incorporation into a company which at its own expense will furnish and operate the lines necessary for transmitting telegraphic correspondence between the postal telegraph offices, depending upon private capital, skill, and economy for success. The company will derive its entire profits from the receipts of the business, which are the only funds from which it can draw its income. It will have a direct pecuniary interest to see that the post-office performs its share of the work promptly and efficiently. The present is substantially a railroad and not a postal system, and at many offices the railroad business has preference over all other. This places it on a distinct footing. The railroad telegraphic business will be managed by those corporations without interference by the government, and the telegraphic correspondence by the Post-Office Department.

The telegraph is shorn of its power over private correspondence and mercantile news by subjecting it to fixed and impartial rules and uniform rates, so low that all can freely use it. The power is divided between the department and corporation, so that neither can use it to the injury of the public, while the distinct interests of the two oppose combination.

The Postmaster-General has the same means for enforcing the prompt and accurate transmission of this as of all other correspondence. No monopoly is conferred, and any company can transmit telegrams if they can do so more satisfactorily to the public. The rates are fixed at twenty-five cents between offices not over 250 miles apart, fifty cents between 250 and 500 miles, seventy-five cents between 500 and 1,500 miles, and one dollar and a half for all greater distances. Letters are generally written after the close of business hours and sent by the night mail. To provide for this correspondence the rates for night telegrams are fixed at twenty-five cents for distances

under 1,500 miles, and seventy-five cents for greater distances. These rates will be prepaid by telegraphic stamps sold at the post-offices. The department will retain five cents for its service, and pay the rest to the company as full compensation for furnishing and operating the lines. The length of the telegraphic letter is increased to twenty-five words, including address and signature. Every post-office near a telegraph line is made a postal telegraph office, while others are established wherever they now are or may be required by the wants of business. This will make a reduction in rates of fifty per cent, and an increase in the length of the message of eighty per cent, and in the number of offices of over one hundred per cent. These great reductions and increased facilities will bring the telegraph within the reach of all, and, when in full operation, will give us the best telegraph system in the world.

The postal system recognizes the rights of property in the owners of the existing lines, proceeding upon the ground that to make any new plan successful it must avail itself of the services and co-operation of the present able managers; that this can only be accomplished by paying liberally for the property it purchases of them, and that it will be much more advantageous to the public to secure this harmonious co-operation, even by paying a large price for its property, than to establish a system at a very much smaller price, but in competition with the Western Union Telegraph Company.

It is not contended that the postal system is free from defects, but that it removes many of the grave evils of the present system, without the introduction of new ones, and that the balance of benefits greatly preponderates in favor of the cheap rates, increased facilities, limited and divided powers of the postal system.

GARDINER G. HUBBARD.

ART. IV. — 1. *Report of the Commissioners appointed to investigate the Cause and Management of the Great Fire in Boston.* Boston City Documents, 1873.

2. *Records of the late London Fire-Engine Establishment.* By CAPTAIN EYRE M. SHAW. London. 1870.

3. *Reports of the Chief Officer of the Metropolitan Fire Brigade on the State of the Brigade and the Fires in London during the Years* 1870, 1871, 1872.

4. *Fire Surveys, or a Summary of the Principles to be observed in estimating the Risk of Buildings.* By E. M. SHAW, Chief Officer of the London Fire Brigade. American Edition. 1872.

5. *Annual Report of the Fire Marshal of the City of New York for the Year ending April* 4, 1872.

6. *Annual Report of the Board of Fire Commissioners of the Philadelphia Fire Department*, 1872.

7. *Report of the Philadelphia Fire Insurance Patrol for the Year* 1872.

8. *Report of the Board of Police in the Fire Department to the Common Council of the City of Chicago, for the Year ending March* 31, 1872.

9. *Addresses of the President of the National Board of Fire Underwriters at the Sixth and Seventh Annual Meetings in* 1872 *and* 1873.

THE improvements which have been made during the past forty years in the apparatus for extinguishing fires are quite as wonderful as in any department of the mechanical arts. The old-fashioned manual engines have been sent into the country to keep company with the stage-coaches; the bell-ringer has been superseded by the electrician; and the painted leather buckets which adorned the halls of careful householders have given place to chemical fire-extinguishers. But with all these advantages in the application of steam and electricity and chemical forces, the newspaper reporters still rejoice in extensive "conflagrations"; and when all our ingenious contrivances fail to arrest the progress of the flames, we fall back upon the primitive method used more than two hundred years ago by the terrified Londoners.

Our modern inventions appear to have left us where we were in the beginning. The new forces brought into operation for putting out fires are neutralized by the increased facilities for the spread of fire. The large cities in this country have grown up without any restrictions in regard to the construction of buildings; and it is within the last half-dozen years only that municipal governments have considered that they had any concern in the matter. Since the insurance offices have taken everything under their protection, from a granite warehouse to a lady's wardrobe, and paid fire departments have been organized, the sense of personal responsibility in the protection of property from fire no longer exists. This is seen in the reckless manner of constructing buildings, and in the general neglect of all precautionary measures.

There is another reason why we have failed to secure the full benefit of the modern improvements in fire apparatus. The introduction of steam and electricity necessitated a complete change in the organization of these departments. In place of the numerous bodies of volunteers who hauled the old machines to the scene of the fire, and manned the brakes, a small but well-trained and well-disciplined organization was required. In many cities the volunteer companies looked upon the introduction of steam fire-engines with the same feeling that the English hand-loom weavers looked upon the introduction of steam machinery to facilitate their labors. As the American engine company was a political power, it was necessary to give it a large share in the new organization, and, as a consequence, the traditions of the old system govern the new. There is much display, noise, and enthusiasm, but very little training or discipline.

Captain Shaw, the chief officer of the Metropolitan Fire Brigade of London, after inspecting the fire departments of the principal cities in the United States, in 1868, said that the telegraph makers and steam fire-engine builders had done much for the departments, but that the officials had done very little for themselves, either by instructing the makers of their machinery as to the real requirements of the service, or by exercising and practising themselves in the use of such appliances as they had. The cause of this he found in the fact that, —

"the chief officers, or, as they are called, chief engineers, of most of the American fire departments, and the principal assistant engineers, are elected, not promoted, and that political influence is commonly paramount in the elections. In some towns, the chief and his assistants were appointed by the mayor, and this was probably the better mode of the two; but in whichever way they obtained their places, the appointments were generally only temporary, and varied in duration from one to about three years, according to local arrangements. It was hardly to be believed that in the midst of a practical nation like the Americans, the chief of an important department, requiring a considerable amount of skill and special training, should be obliged every year to enter into competition with his own subordinates and others, and either to stand continued fresh elections or to lose his place. Such was, however, the case, and the effect of the system is, of course, fatal to the advancement of the professional work of the department. . . . . The Americans had now powerful and weighty machinery and appliances, drawn about by large numbers of horses, and worked by enormous bodies of men; but it could hardly be supposed that the cities would long continue to supply funds for the payment of heavy expenses rendered necessary chiefly by the want of skill and practise on the part of those concerned. It was a very singular and unaccountable fact, that the Americans, in their admiration for steam fire-engines, had forgotten or ignored the use of hand-worked engines, and had abolished them altogether, thus absolutely depriving themselves of the means of instantly extinguishing fires at their own doors, leaving themselves in this particular point far behind the most backward nations of Europe. He had asked in every city why this had been done, but he had not received as much as one reply giving the slightest reason; on the contrary, the answer generally was, that hand-engines were of no use, — a statement quite without meaning in the face of the fact that some of the principal cities in the world are still entirely protected by them." *

In a communication written since the fire in Boston, Captain Shaw says: —

"When I was last in America, it struck me very forcibly that, although most of the chiefs were intelligent and zealous in their work, not one that I met made even a pretension to the kind of professional knowledge which I consider so essential. Indeed, one went so far as to say that the only way to learn the business of a fireman was to go to fires, — a statement about as monstrous and as contrary to reason as if he

* London Herald, September 28, 1869.

had said that the only way to become a surgeon would be to commence cutting off limbs, without any knowledge of anatomy or of the implements required.

"There is no such short cut to proficiency in any profession, and the day will come when your fellow-countrymen will be obliged to open their eyes to the fact, that if a man learns the business of a fireman *only* by attending fires, he must of necessity learn it badly, and that even what he does pick up, and may seem to know, he will know imperfectly, and be incapable of imparting to others.

"I consider the business of a fireman a regular profession, requiring previous study and training, as other professions do; and I am convinced that where study and training are omitted, and men are pitchforked into the practical work without preparation, the fire department will never be found capable of dealing satisfactorily with great emergencies."

The efficiency or inefficiency of the fire departments in this country, as compared with those in other countries, cannot be measured by the percentage of property destroyed. It is necessary to take into account not only the difference in the methods of constructing buildings, but the regulations which are in force in regard to the manufacture, storage, and use of all combustible materials. It is claimed by those who control our departments, that the comparatively small losses sustained in London, Paris, and Berlin are owing wholly to the fire-proof character of the buildings in those cities, and the rigid enforcement of certain police regulations. The lack of training on the part of members of the departments is more than compensated, in their opinion, by *esprit de corps*, and the general superiority of the American fire apparatus.

Given a body of volunteer militia, armed with needle-guns, but without any special training as to the manner of using them, and put it in opposition to a thoroughly drilled and disciplined body of regulars, armed with smooth bores; and, upon the theory of the American fire engineers, the regulars would go down before the superior dash and enthusiasm of the volunteers. Undoubtedly, enthusiasm will sometimes win by its own force, but in the long run training makes the best record. The whole theory is, however, based upon a false notion that the more a man knows about his business, the less interest he takes in it.

These general statements of the views entertained by the officers of our departments as to the qualifications necessary for the duties of a fireman, ought, perhaps, to be somewhat modified since the great fires in Chicago and Boston. In a number of the large cities, the departments have been placed under the control of a Board of Commissioners, appointed for a term of years, and an effort has been made to get rid of political influences. This is the first step, and the most important one, towards establishing the organizations upon a sound basis. Boston, notwithstanding the lesson it has received, still adheres to the old system. The evidence accompanying the recent report of the Commission appointed to investigate the cause and management of the fire on the 9th of November last furnishes the material for a description of this system, and its method of operation, which may not be without interest.

A chief engineer and fourteen assistant engineers are elected annually, by a concurrent vote of the two branches of the City Council.* All other members of the department are appointed by the Mayor, with the approval of the Aldermen. But the City Council has entire control of the number of persons to be appointed, designates their qualifications, term of service, and duties, and provides and locates all the fire apparatus. The engineers have some authority by statute law to take measures for the prevention of fires, but it is limited.†

During a fire, the chief and assistant engineers have almost unlimited power; but they may be placed in such a condition by the previous action of the City Council in locating the fire apparatus, and in establishing the regulations under which their subordinates act, that they cannot exercise their power with any efficiency. For instance, under the authority to fix

* The city government of Boston consists of a Mayor, elected annually; twelve Aldermen, elected annually on a general ticket; and four Councilmen, elected annually by each of the sixteen wards. The Board of Aldermen and the Common Council constitute the body known as the City Council. They act separately upon most matters, in the same manner as the Senate and House of Representatives.

† The prohibition of smoking in the streets of Boston, which has been the subject of much good-natured ridicule, on the supposition that it was a sumptuary regulation, occurs in the statute defining the duties of the engineers in regard to the prevention of fires.

the qualifications of members, the City Council provides that every foreman and assistant foreman of a company shall be nominated annually, and whenever a vacancy occurs, by the members of the company. It often happens that the man who has held the position for years, and who is best qualified for it, is thrown out by a bare majority of disaffected members, and one who is totally inexperienced put in his place. The regulations give this man the power to direct the placing of the engine at fires, and the charge and control of the hose and hose-men.

An engine company consists of a driver, a fireman, and an engineer, who are permanently employed, and eight hose-men (including the foreman), who do duty only in case of fire, and who are engaged at other times in various private employments. A hose company consists of a driver, who is permanently employed, and eight hose-men, including a foreman. The hose companies act independently of the engine companies. When a fire is below the third story of a building, they connect the hose with a hydrant; when it is above, they connect the hose with an engine. A hook and ladder company consists of a driver, permanently employed, a foreman, an assistant foreman, four axe-men, four rake-men, and from six to thirteen ladder-men. The crew of the steam fire-boat, attached to the department, consists of a captain, an engineer, and five assistants, all permanently employed. The duties of these men are sufficiently indicated by their titles. The whole force, including the engineers, consists of four hundred and fifty-nine men. The salary of the chief engineer is $3,000 per annum; of the assistant engineers, who are on duty only a portion of the time, $500 per annum; of the engine-men, $3.50 per diem; of the firemen, $3.25 per diem; of the drivers, $3 per diem; of the foremen, $325 per annum; of the hose-men, $300 per annum.

With the exception of the engineers, the men continue in service during good behavior. Although the foremen and assistant foremen may be reduced to the ranks, by the action of the companies at their annual nominations, they cannot be deprived of membership. The annual election of engineers by the City Council has a very pernicious influence upon the discipline of the department, not so much on account of the

changes which are made, — as the old members are generally re-elected, — but on account of the state of subserviency which results from their dependence upon a political body. Assistant engineers are put in nomination against their chief; foremen of engine companies enter into political competition with the assistant engineers; and the members of companies intrigue for the nomination of foreman. It would hardly be expected that such an organization could enjoy a high state of discipline. The surprising part of it is, that there should be any discipline at all. Neither the officers nor the men have any training, except that which they receive while attending fires.

The apparatus of the department in service at the time of the fire in November consisted of twenty-one steam fire-engines, weighing from 6,800 to 10,500 pounds each (including about 450 feet of hose), and capable of throwing from 300 to 550 gallons of water a minute to a horizontal distance of 320 feet, and a vertical distance of 220 feet; ten hose carriages, carrying an average of 900 feet of hose; seven hook and ladder carriages, carrying from fifteen to twenty ladders, and a number of axes, rakes, hooks, forks, and buckets; three fire-extinguisher wagons, each carrying ten portable extinguishers of the Babcock patent, and several hundred feet of two-inch and one and one half inch hose; and an insurance wagon, carrying rubber coverings to protect property exposed to damage by water. The Insurance Brigade, as it is called, consists of nine men, who belong to the regular department, but who are paid by the insurance companies. Since the fire, the department has been enlarged by the addition of a steam fire-boat, for the protection of the water front, capable of throwing eight powerful streams, several steam-engines, and a Babcock chemical engine. The last-named machine is a recent invention of great value in the early stages of a fire. It weighs about 3,200 pounds, and may be drawn by one or two horses. It contains two chambers, one of which can be charged while the other is being discharged; so that a constant stream can be kept up through a one-inch pipe to a vertical distance of seventy-five feet. As these machines are easily handled, and always ready for use, they are admirably adapted to take the place of the manual engines which Captain Shaw considers so essential to the apparatus for a city.

The control of the telegraphic fire-alarm system is in the hands of a department entirely independent of the fire engineers.* A great number of boxes are placed in different sections of the city, generally on the corners of streets; and the alarms are given by pulling a slide inside these boxes, which communicates the number to the central office at the City Hall. From that point wires connect with the bells on churches and other public buildings, and also with gongs in the fire stations, and the private houses of the engineers. In some of the engine-houses the electric current which gives the alarm unhitches the horses from their stalls at the same time, and those which have been trained instantly take their places at the pole, without any word of command. Every effort is made to have the apparatus on the ground and in working order in the shortest possible time; and in the performance of this duty (owing in a great measure to the rivalry existing between the different companies) remarkable energy is shown. In many cases the engines leave their stations in twenty or thirty seconds after the alarm is struck.† An ingenious arrangement has been recently introduced, by which the water in the boilers of the engines is kept constantly heated by connection with the heating apparatus in the station-houses; and the engines are ready for service as soon as they arrive on the ground. The city is divided into eight fire districts, and only that portion of the apparatus situated in the district from which that alarm is given responds to the first signal.

The fire of the 9th of November originated in the basement of a warehouse about seventy-two feet high, including a Mansard roof, and covering an area of fifty by one hundred feet. The front wall was of granite, the rear and partition walls were of brick.

* It would hardly be possible to devise a more ingenious scheme for dividing responsibility, and insuring the largest possible outlay, than that adopted by the City Council for the government of the fire department. There is a joint committee of the City Council on the department, a board of engineers, another joint committee on fire-alarms, a superintendent of fire-alarms, another joint committee to purchase lands and erect and repair station-houses, and another board which locates and controls the hydrants and reservoirs.

† In New York the engines are frequently run out with the horses attached in twelve seconds after the alarm is sounded.

The building stood at the corner of two streets, — one of the streets being forty-five feet in width, and the other forty feet. On the opposite sides of these streets there were buildings of about the same height, crowned by wooden Mansard roofs. It is stated in Captain Shaw's "Fire Surveys" that

"The distance apart of buildings fronting each other should be in proportion to their height; in fact, as a simple rule, it might be laid down that they should be separated by a distance equal to half their combined height. Thus, for instance, a building of sixty feet and a building of thirty feet high might safely occupy sides of a street forty-five feet wide.* . . . .

"With a well-organized and properly equipped fire brigade it is found that sixty feet is the greatest height at which a building can be quickly protected, and that the cube of 60, or 216,000 cubic feet, is the largest cubical capacity which can be protected with reasonable hope of success after a fire has once come to a head."

In this case, the combined height of the buildings was 144 feet, on streets 40 and 45 feet in width; and the cubical capacity of the building in which the fire originated was over 400,000 feet.

There was a fatal delay in giving the alarm. It being Saturday, the wholesale stores closed at an earlier hour than on other days. At six o'clock this section of the city was almost deserted. At that hour all the police officers in the city are withdrawn from the streets, to attend the roll-call at their stations, and as soon as that is ended the first night watch goes on duty. Two Charlestown officers testify to seeing the fire from a point at least a mile and a half distant at about ten minutes past seven o'clock. They establish the time by a railroad clock. A number of other persons saw it between fifteen and twenty minutes past. The police officer on whose beat the fire occurred was chasing some boys who were making a disturbance in the street, when he came in view of the fire, which was then "streaming from the top of the building."

* The Metropolis Local Management Acts provide (§ 85, cap. cii. 25 and 26 Vict.) that no building, except a church or chapel, shall be erected on the side of any new street of a less width than fifty feet, which shall exceed in height the distance from the external wall or front of the building to the opposite side of the street, without the consent in writing of the Metropolitan Board of Works.

There was an alarm-box right at his hand, and he stopped and gave the alarm on the instant. The operator on duty at the central office started his instruments immediately, and looked at the clock in order to make his record. It was twenty-four minutes past seven.

One steam-engine and one hose-carriage started for the fire just before the alarm sounded, having received notice by the cry of fire in the streets. The engineer of the steamer testifies that he had a stream on the fire in four minutes after the bells struck. The engineer of the second engine testifies that he played two streams inside of ten minutes from the time the alarm was given. A member of the first hose company which arrived testifies that his company got a stream on the fire about five minutes after the alarm, and about six minutes before the first engine played. An assistant engineer living near by "heard somebody hallooing fire in the street," and looking at his clock saw that it was eleven minutes past seven. He went immediately to the fire, and arrived there in advance of any fire apparatus.

The epidemic which prevailed among the horses at that time throughout New England caused some delay in getting the engines and ladder companies to the spot; but the delay on this account was not so serious as many have supposed. The temporary loss of horse-power had been made good in a great measure by the addition of five hundred men to the force, who were paid one dollar each for assistance in dragging the apparatus to a fire, and twenty-five cents an hour for the time they served. The nearest engines responded about as quickly after the alarm as they would if the horses had been fit for duty. Those at a distance were delayed from five to forty minutes. There is a vast amount of conflicting testimony upon this point of the delay in giving the alarm, and the delay after the alarm was given, in getting the fire apparatus on the spot and into operation. It would be safe to say that there was a delay of at least fifteen minutes after the fire was visible at a considerable distance, before the telegraphic alarm was given.*

* The Chicago fire was discovered by a policeman when it was so small that he thought it best not to sound an alarm. He tried to extinguish it himself, but failed,

At half past six a single bucket of water would probably have been sufficient; an hour later, and the whole force that could be mustered was insufficient. As police officers, all of whom are supplied with keys to the boxes, are expected to give the alarms, although duplicate keys are deposited in shops or houses near by, those who first saw the fire took no steps to ascertain whether an alarm had been given, but stood enjoying the sight, and speculating upon the failure of the engines to arrive.

The fire appears to have started near the bottom of the opening for the elevator, which extended from basement to attic. As soon as the flames entered this opening, they were carried up with tremendous force, and burst through the roof in an incredibly short time. The building contained about $250,000 worth of dry goods, some of the articles being highly combustible. The foreman of the first hose company which arrived testifies that the rapidity of the fire was beyond anything he had ever seen during an experience of twelve years in the department. An engineer of one of the engines says: —

"When I arrived there [six or seven minutes after the alarm], the whole rear of the building was on fire, and the upper stories both front and rear. The flames were coming right out fifteen feet. They would almost go across the street. I stayed there as long as I could. The chief told me to stay there until it burned the gauge-cocks off, and I stayed as long as I could stand it."

The chief says: —

"In my experience in the Boston fire department, covering twenty-five years, I never saw such a sight as was presented that night; within eight minutes from the time the alarm sounded, I was on the ground, and the building was literally consumed. With all the fires we have had in that district and other sections of the city, I never saw

---

and then notified the nearest steam-engine company. The engine was placed in position at a hydrant about five hundred feet from the fire, and it required all the hose on the reel to reach it. In the mean time, sparks from the building originally on fire had caught in some tenement-houses, too distant for this first engine to reach with its streams. An interval of twenty minutes had elapsed since the fire was discovered when the watchman at the City Hall, half a mile distant, saw the light, and sounded an alarm. This called three additional engines, the chief, and one assistant engineer. The second and third alarms were then sounded, which called out the full working force of the department.

the time, no matter how inflammable the building was, whether it contained oils or any other inflammable material, but what we could enter the building itself; but here was a case where you could not get near the building. The material of the building being granite, its explosive properties were shown very conclusively by the shower of granite that was flying in every direction, from pieces weighing one pound to ten and twenty."

It was a bright moonlight night. The velocity of the wind was from five to nine miles an hour. But as the fire went on, the induced currents of air in the vicinity were very strong, so that those who stood in the streets near by supposed there was a great wind-storm prevailing.

According to the returns of the engineers, there were seven steam-engines on the ground within fifteen minutes from the time the alarm was sounded, and the whole department reported for duty within an hour and thirty minutes. These returns are probably quite incorrect, as in most cases the time given was only guessed at, and the officers were all interested in making as favorable an exhibit as possible. The distribution of fire apparatus throughout the city had been made by the City Council, without any regard to the great bulk of property to be protected. In the old portion of the city, where the assessed value of property amounted to $514,697,450, there were only six engines; while an outlying ward, having an assessed value of $31,395,300, had an equal number. In the whole district covered by the fire, containing more perishable property than any other portion of the city of equal extent, there was not a single engine or hose-carriage.

The officers who first arrived attempted to fight the fire in the building where it originated, but finding that impracticable, they gave their attention principally to the buildings adjoining on the southerly and easterly sides. It would appear from the evidence that the engineers as they arrived took charge of the first engine or hose company that they came across, and went to work. It was just here that the professional training which Captain Shaw insists upon, would have enabled these men to comprehend the emergency, and take measures to meet it. They entered upon the contest without any plan, without any concert of action even. Instead of stopping to consider calmly

where an effective opposition could be made, they took up positions from which they were driven by the heat of the fire before they could get to work. It was an extraordinary fire, but the engineers proceeded to fight it in the ordinary way. In the course of the next hour the fire made such progress that it is doubtful whether any man or any body of men could have checked it with the means then at hand.

Aid was furnished very promptly from other cities and towns, and in five hours after the alarm was given there were fifty steam-engines on the ground, besides several hand-engines and a large number of hose-carriages. Here was a very powerful force, but for various reasons it could not be utilized for a considerable time. The hose and hydrant couplings were of different sizes, and there was a good deal of delay in making connections. The supply of water was insufficient. The district over which the fire was then spreading was covered a few years ago by dwelling-houses from two to four stories in height. These small houses had given place to great warehouses from sixty to ninety feet in height, filled, in most cases, with combustible materials. The small six-inch water-pipes originally laid in the streets had not been changed. They had become reduced by rust to about five inches in diameter. The engines which drafted from hydrants near the large mains reduced the head so that those drafting near the fire could not play a stream above the second or third stories of the buildings. No change had been made in the old-fashioned hydrants. They were placed in the sidewalks and supplied by a small branch from the street pipes, so that, unless there was a heavy pressure upon the street pipes, these hydrants were almost useless.* There were a number of reservoirs located under the principal streets, having a capacity of about four hundred hogsheads each; but as they were fed by the same pipes which supplied the hydrants, they were soon exhausted, or reduced so low that they could not be made available.

The appalling rush of the flames, the falling walls, and the

* This pattern is known as the "Boston Hydrant." It has only one outlet, with a capacity of three inches. The "Lowry Hydrant" is set on the mains in the street, and has four outlets, with a capacity of nine inches. These hydrants are now being placed on all the large mains in the business portion of the city, so as to enable the engines to be massed in case of a large fire.

short supply of water, all tended to discourage the firemen. Dr. Henry J. Bigelow, in his testimony before the Commission (page 142), says: —

"The obvious thing through the night was the utter inadequacy of the means to the end. The thing that I noticed, wherever I saw the engines and the fire, was that the streams failed to reach the upper story. They broke into spray and seemed wholly ineffective at that height. The second thing was that, I should say, half the time the streams seemed to be playing at the intervals between the windows, as if aimed at nothing; or, to give an illustration of it, as if the firemen were tired and had got to do something, and it did not seem to be of much use to play into a window; and so, as the water was coming, they just let it go. Occasionally there were spasmodic efforts to wet the opposite houses, but apparently they were soon abandoned. Occasionally hose was taken to the top of a store to play on the next store, but for some reason that was also soon abandoned. I suppose the firemen were roasted out. The radiated heat was immense at a distance, — I mean against the wind. Another thing noticeable through the night was the number of unemployed engines to be seen standing at corners. Another thing I noticed was the way the fire caught from one building to another. A strong party-wall seemed to be the best protection. But when one store was pretty well burned, the upright roof of the next one (for they were most all of them French roofs) began to smoke at a dozen or so small points between the slates. After a while, a few little tongues of fire appeared here and there.

"Before the slates gave way, these little tongues of fire were coming out between the slates; here fire, there smoke, and tongues of flame everywhere. Then came the flame, perhaps not larger than your finger or your wrist. Presently somewhere a place as big as your head was burned through, and then the whole roof was on fire. Within a very few minutes the story below the French roof showed fire at the windows. Then quite an interval elapsed, and the fire broke out simultaneously from many windows at once, as if the ignition had been impossible from want of air, until the windows were broken, when the whole burst into flames."

President Eliot of Harvard College, who happened to be in the vicinity, and who went to the fire soon after the alarm was given, says: —

"The thing I noticed most that night, up to twelve o'clock, was that water was not put on the fire. The great bulk of the water was thrown

on to the vertical walls of those granite and brick buildings. The water did n't go more than three stories high, as a rule; sometimes it went a little higher, but seldom more than three stories high. It then fell down in front of the building, across the sidewalk, and went into the street. The hose-men did n't break the windows, as a rule, and the water therefore did n't penetrate the buildings at all. I over and over again saw powerful streams of water used in that way, where the upper stories and roofs of the buildings on which they were playing were in a light blaze. I saw it repeatedly during that night, and as late as eight o'clock on Sunday morning. . . . . That was the most astonishing thing during that whole night, to see Americans using superb resources in that way. I would not have believed it; nothing would have induced me to believe it. . . . . It seemed to me that there were two defects of organization that were pretty conspicuous. One was, that the chief engineer had apparently no means of commanding the whole field, and he had no means of sending orders. I saw this person who was pointed out to me as Mr. Damrell run two or three times across Winthrop Square in the course of fifteen minutes, carrying his own orders, and of course fatiguing himself very much. He did n't seem to have any means of getting intelligence from the different parts of the field. In short, the fire department seemed to me to lack the methods of an army altogether, about receiving intelligence and conveying orders. Then I could n't but sympathize with the reluctance of the firemen to go on such high roofs. One reason was that there were not firemen enough to handle the hose up those high buildings, and to station men all along the line, at short intervals, to a place of safety. I think hose-men who are to go on roofs are entitled to that protection. They are entitled to feel that there are experienced men all along the line of hose on the line of retreat, who will warn them of danger and secure their retreat. It seemed to me there were not men enough attached to the hose and hose-carriages to do that."

The resources at this time, as we have shown, were not so superb as Mr. Eliot supposed. On Sunday morning, when the fire had spread so as to enable the engines to draw directly from the large mains in Washington, State, and Broad Streets, powerful streams were thrown to the tops of the highest buildings; and if the Lowry Hydrants had been attached, the supply would have been ample. There were men enough attached to the companies, if they had been properly managed. The number on regular duty that night in the Boston department alone was nearly three times as large as the regular force attached to

the London department. But the engineers did not have their men "well in hand." There was a great deal of wasted energy, and a good deal of straggling.

A remarkable instance of what can be accomplished by men working with desperate energy, under a leader fertile in resources, is shown in the testimony which Mr. George Gardner gives of the way the fire was checked at Hovey's warehouse. If the limits of this article permitted, it would be well worth transcribing here, not only on account of the value of the testimony itself, but as a remarkably clear and simple statement of a very exciting contest.

Between ten and eleven o'clock in the evening, the fire was making such rapid progress, and the ordinary appliances appeared to be so unequal to any successful opposition, that many citizens who had a large amount of property at stake insisted on the use of powder. Of the conditions necessary to success in its use, they had no knowledge whatever. They had read in their school-books of the use of powder at the great fire in London; and they had heard of its use at great fires since that time, but of the manner in which it was used, and the results accomplished, they knew nothing. The chief of the fire department had made some investigations after the fire in Chicago, and had ascertained that, in almost every instance, the use of powder for this purpose had been disastrous. In the hands of inexperienced persons, laboring under great excitement (the conditions under which it has generally been used at fires in this country), it could hardly be otherwise. In the present instance there were insuperable obstacles to success. The streets were narrow and very irregular. The buildings contained a large amount of wood-work, and were generally filled with combustible materials. It was clearly impossible to accomplish anything by blowing up single buildings, and the means were wanting to do the only thing that might, under certain circumstances, have been effective, namely, the levelling of all buildings between two streets running parallel along the whole front of the advancing fire.

A large number of excited individuals had gathered in the Mayor's office, as the alarming extent of the fire became known, and under the pressure of the conflicting demands made upon

him, the Mayor became as helpless and confused as the gentleman who held a similar office in London, during the great fire of 1666.* The chief engineer was summoned to the office, and induced, against his judgment, to give permits for blowing up buildings to a number of persons, most of whom were totally unqualified for the duty.† They went to work in the most reckless manner; and it was not long before the firemen became alarmed, and threatened to withdraw unless the use of powder was stopped. As the gas had not been shut off in any of the buildings or streets, it escaped in large quantities from the broken pipes; and the combustible materials in the buildings caught fire as soon as the explosions occurred. Great clouds of smoke, impregnated with the escaping gas, rose high in the air, and exploded with the noise of bursting bombs, sending out tongues of flame which were seen at a distance of sixty or seventy miles. The radiated heat was so great that the thermometer in the observatory of the United States signal office, two thousand feet distant, and dead to windward, rose five degrees in the night.

On Sunday morning it was observed that the induced currents of air, which had been very violent during the night, were beginning to die out. This has been explained on the theory that the surrounding atmosphere is deprived of its oxygen faster than diffusion can replenish it. Four fifths of the atmosphere, being carried up through the fire as inert matter, in the form of nitrogen and carbonic acid, is forced outward, and falling down, finally interposes a barrier of deoxydized air between the fire and the fresh inflowing air. Just at the time when the people were beginning to despair of saving their banking-houses and public buildings, these atmospheric changes had begun to operate in their favor. The firemen found they were making an impression upon the flames. For the reasons already stated, the supply of water was improved, and a large number of streams, projected by the full power of the engines, were turned

* "People do all the world over cry out of the simplicity of my Lord Mayor in general; and more particularly in this business of the fire." — *Pepys's Diary*, Vol. III. p. 282.

† These permits were illegal, as the laws of the State required the assent of three engineers before any building could be destroyed; and they could not delegate the authority to blow up or pull down buildings generally.

upon the fire. The permission to use powder was revoked, much to the chagrin of the gentlemen who were amusing themselves by the indiscriminate destruction of buildings. By four o'clock on Sunday afternoon the fire was under control.

During this short space of twenty hours, the fire had destroyed property of the value of seventy-five million dollars. If we take into account the time, and the small extent of territory covered (only sixty-five acres, including the streets), the loss is unparalleled by any fire of ancient or modern times. The rapidity with which the fire spread was owing principally to the wooden roofs, which crowned the high buildings erected on narrow streets. There is no objection to the Mansard roof as constructed in Paris, where it is required, in all cases, that the walls should extend above the horizontal and the slope of the roof and be coped; and where the use of wood is never allowed, except for the inner plankings. Mr. A. C. Martin, in his testimony before the Commission, says: —

"Our architecture here in Boston has sprung from foreign architecture, which was carried out in stone; but it is so much easier to make a showy window in wood, and so much cheaper, that the owners were willing to do it, and architects, of course, were willing to produce an effect; so that, instead of the stone constructions which they have abroad on their roofs, and nothing else, we have great masses of wood, which become, in case of fire, very objectionable features. . . . . Then I think another reason why fire spreads so rapidly in our cities — I do not know that Boston is peculiar in that respect — is that we have timber very plenty. We put in our heavy floor timbers, three, four, and five inches thick, and fourteen or sixteen inches deep, and from six to twelve inches apart, as the case may be; then comes the under floor on top of these timbers, and the upper floor on top of that; then the walls are furred, and lathed and plastered, making all the floors and the furring on the walls open, so that the air passes freely through; and in case of fire, these spaces become conductors; the currents pass through very freely, and fire is communicated very rapidly, especially in an upper direction."

In Liverpool, previous to 1843, the large warehouses were built with continuous roofs, and with wooden doors and penthouses to the different stories. As a consequence, enormous losses were sustained when a fire occurred, and the rate of insurance

went up from eight shillings per centum to thirty-six shillings. The building law was amended, so as to require the erection of party-walls five feet high between each warehouse; doors and penthouses were constructed of iron; the cubical contents of the buildings were limited; and the result was soon shown in the reduced rates of insurance.

It is customary to designate buildings constructed of stone and iron as fire-proof, without taking into account the tests to which these materials may be subjected, or the purposes for which the buildings are to be used. To secure an entirely fire-proof structure, large warehouses must be divided into compartments by solid brick walls, or the floors must be supported, as in the old Roman plan, upon brick piers, or groined arches laid in cement. Nearly all the buildings in Paris are built upon the flat system, with floors either vaulted or filled in with mortar, made of plaster of Paris, the best non-conducting material in use.

"It may be laid down as a rule," says Captain Shaw, "that of all building materials stone is the least able to resist the effects of fire.* It may be safely used for walls, because in that case it is supported throughout, or it may be used for stairs, provided that they are built

* "Granite is not so likely to resist the action of intense heat as some of the other building-stones, such as limestone, sandstone, and indurated argillaceous rocks; and, in my opinion, the cause of the destruction of buildings composed of granite, the crumbling and 'blowing up' which has lately been observed in Boston, whilst brick buildings have escaped with comparatively little damage, is owing to the fact that granite being composed of a number of crystalline minerals, one of these having cavities, the majority of which are filled, or partially filled, with water, on the application of heat so intense as that of the Boston fire, would generate steam or inflammable gas to such an extent as to blow the particles of which the stone is composed into fragments; in fact so as to utterly destroy its integrity and leave nothing but a crumbling mass of ruins. Any one at all conversant with the explosive nature of steam will readily see that each crystal would be similar to a boiler without a safety-valve, being subjected to intense heat, the result being, of course, that as the heat becomes generated, without the possibility of escape, the boiler must burst, and that the brick-work (in the case represented by the other minerals of the granite) incasing the boiler, must inevitably be rent asunder." — E. Hendren.

Evelyn, visiting the ruins of the London fire of 1666, says: "It was astonishing to see what immense stones the heat had in a manner calcin'd, so that all the ornaments, columnes, freezes, capitals, and projectures of massie Portland stone flew off, even to the verry roofe." (American edition, p. 321.)

solid, but for stairs in the ordinary sense of the word, that is to say, steps with one end pinned into a wall, and the other end hanging and unsupported, stone is a most dangerous material to use." *

"Wherever iron is used, it should be protected either by good brick-work, sound plastering, or, if nothing better can be found for the purpose, solid wood-work round it. Wood-work, if really sound and solid, will resist for almost any length of time every possible effect of heat short of actual flame; even when flame has reached it, it is by no means destroyed at once, but on the contrary is sometimes found to last for hours; and wood protected on its under side by proper plastering which will not fall down or crack on the application of heat seems to be a most powerful resister of flame." †

The slight resistance which the pretentious granite fronts offered to the progress of the fire in Boston was doubtless owing in a great measure to the fact that the walls were, in most cases, constructed of different materials, bricks of an inferior quality being concealed behind a thin covering of ornamented granite or freestone. The difference in the ability of the materials to withstand the effects of fire naturally caused a separation of the parts. If these walls had been built entirely of stone or entirely of brick, they would have been much safer. Another cause of the rapid spread of the fire is to be found in the fact, that many of the buildings had skylights, constructed with light wooden frames. The burning brands from the fire, falling upon these fragile coverings, broke through, and buildings situated a considerable distance from the main body of the fire suddenly burst into flames, and led the firemen to think that incendiaries were at work. Most of the buildings contained open hoistways, extending from the basement to the attic, which made it impossible to confine the fire to the story in which it started.

Previous to 1871 there was no attempt to regulate the construction of buildings in the city of Boston. In that year a bureau for the survey and inspection of buildings was established, but with the exception of tenement houses it had no jurisdiction over structures then erected. Its authority has been greatly enlarged since the fire; and the regulations with

* Fire Surveys, American edition, p. 29.

† Practical Magazine, January, 1873, p. 24.

regard to the thickness of walls, and the materials to be used on the exposed portions of buildings, are quite as stringent as those in force in New York or London. The New York Building Act, adopted in 1871, is more complete in its details than the London Act;* but it is not enforced as strictly; and it would undoubtedly be found, upon careful inspection, that the modern buildings in the former city offered greater facilities for the spread of fire, and were much less substantial in every way than the same class of buildings in the latter city. With the exception of New York, Washington, and Boston, scarcely any supervision is exercised over the construction of buildings in the larger cities of the United States, although most of them have been visited, some more than once, during the last forty years, by many destructive fires. The fire in New York, in 1835, destroyed 648 of the best warehouses. In 1838, Charleston, South Carolina, lost 1,158 buildings; in 1845, Pittsburg lost 1,000; in 1845, New York lost 302 of its best stores and dwellings; in 1848, Albany lost 300 buildings; in 1849, St. Louis, 350; in 1850, Philadelphia, 400; and in 1851, San Francisco (in two fires), 3,000. Troy, Savannah, New Orleans, Mobile, Portland, and Brooklyn have also suffered severe losses in the same period. In Europe there have been but two great fires during that time, — the fire at Hamburg in 1842, which destroyed property valued at seven millions sterling; and the fire at Constantinople in 1870.

No better evidence could be shown of the thorough manner in which buildings are constructed in Paris than the failure of the incendiary Communists to extend their work of destruction beyond the few public buildings which they had, with devilish ingenuity, prepared for the flames. Under the same condition of things, it would have been impossible to prevent an American city from being wholly destroyed.

The President of the National Board of Underwriters, in his address at the opening of the Annual Convention of the Board, on the 23d of April last, said: —

"Owners of property, builders, and architects alike seem to have been wilfully blind to the immense risks they were imposing upon property by the modern style of building, which, without even beauty

* 18 and 19 Vict. cap. 122.

or character to recommend it, has obtained in this country. Even the insurance interests, though somewhat alive to the danger, were afraid to assert their knowledge, and decline to insure such buildings, preferring to go with the multitude; the penalty has been paid for this neglect of duty, at a fearful price by us all. The fact is, and we cannot and do not care to conceal it, our laws upon the subject of the construction of buildings have been too crude, and even those we have not well enforced. In Europe it is different. Not only does the government make proper laws on this important subject, but it enforces them; and in the cities of Paris, Vienna, Florence, Berlin, Amsterdam, Dresden, and Madrid, the government maintains a constant and very careful supervision by trained architects over the buildings in process of erection or alteration, no mere politicians, speculative builders, or civilians being allowed to have a voice in the matter. It is a hopeful sign that the public press seem to have awakened to the great importance of this matter, and, as the journals of all our great cities have been discussing the question of safety in building with marked earnestness, it cannot fail to awaken healthful public opinion on this vital subject. I have taken pains to collect the laws of all the leading European cities in regard to buildings, and have given them careful reading, and do not find any provisions in them that it would not be in our power to ingraft upon our laws, and enforce, and we might then hope that at least some portion of the New York or Philadelphia of our age might be the New York or Philadelphia of the next."

It may be said, upon this, that the responsibility which some of the leading insurance companies are beginning to feel for the present condition of things is another hopeful sign. The reckless manner in which the fire-insurance business is conducted in this country, growing out of the competition between companies organized under different laws, has undoubtedly done much, not only to encourage the present careless method of constructing buildings, but to produce inefficiency in the municipal organizations for the extinguishment of fires. The rates of insurance are not based upon statistics; they are not based upon anything but the judgment of individual agents, who, as a general thing, have no qualifications whatsoever for the business.

It has been said that nothing shows better the relative degrees of hazard than the different rates charged for insurance. This statement is far from true. For instance, the rate for a

planing-mill or a carpenter's shop would be about six per cent; while the rate for a five-story brick and granite building, filled with hemp, jute, or cases of dry goods, so as to make it inaccessible to the firemen, would be one, or three fourths of one per cent. Statistics of fires show that the losses in the case of planing-mills, carpenters' shops, match factories, and buildings used for like purposes bear no proportion to the rate of insurance charged. It is the rule to charge a higher rate on an isolated wooden dwelling-house in the country than on a brick house in the city. The stock companies charge about the same rates on a building occupied as a store that they do on the same kind of a building occupied as a dwelling-house. The mutual companies, on the other hand, would make the rate on the store three times as high as on the dwelling-house. Some of the leading insurance agents in Boston urged their companies to cancel policies at high rates in the country, and take all the risks they could get at low rates in a district crowded with high buildings, with wooden roofs, on streets not more than thirty or forty feet wide. Of the thirty-one Massachusetts stock companies doing business at the time of the great fire, twenty-three failed; and of the fifteen mutual companies, four were rendered insolvent. Here were twenty-seven companies reduced to bankruptcy by a fire which covered only sixty-five acres of ground, including the streets.* The total insurance on the property destroyed amounted to $ 56,094,082, of which about two fifths were held by companies of other States and other countries. The Massachusetts companies paid, on an average, less than fifty per cent of their losses, and the total amount collected is $65\frac{78}{100}$ per cent of the gross insurance.

The insurance on property destroyed in the Chicago fire amounted to $ 92,022,538, of which $ 33,878,000 were held by Illinois companies, and $ 58,144,538 by companies in other

* At the special session of the Massachusetts Legislature, held after the fire in November, an act was passed requiring the authorities of cities and towns containing more than four thousand inhabitants to divide their respective cities and towns into fire-insurance districts; and insurance companies are forbidden to take or have at risk on property other than dwelling-houses and iron buildings and their contents, in one such district, an amount exceeding its "net assets available for the payment of losses in Massachusetts."

States. All the Illinois companies were rendered bankrupt, and the companies in other States paid, on an average, only $67\frac{44}{100}$ per cent of their liabilities. The total loss by the Chicago fire has been variously estimated from $118,000,000 to $190,000,000.* Twenty-five thousand buildings, covering an area of two thousand acres, were destroyed.

It has been estimated that the loss from fire in 1872 (exclusive of the Boston fire) amounted to $40,000,000. Upon the returns of business for a single year, it appears that the best fire-insurance companies in the United States (the bankrupt offices being excluded) lost $6,000,000. The dividends paid to stockholders were obtained from the earnings of capital apart from the underwriting department.†

Soon after the Chicago fire an effort was made in the large cities to establish rates of insurance upon a sound basis; but in less than sixty days, many of the companies which had given in their adhesion to the new rates began to "cut under," and in six months the majority of companies had returned to their old practices. The severe losses sustained during the early part of 1872 demonstrated the necessity of organizing the reform upon a wider basis. The National Board of Underwriters, which had been formed some years before, but which had practically ceased to exist, was revived, with new powers and duties; and with the aid of the lesson taught by the Boston fire, it promises to perform a much-needed work. The National Board is now composed of thirty-one State boards, the whole organization containing over eight hundred local boards, and seven thousand members. It is to be hoped that, in addition to the subjects which have already engaged the attention of the general board, the organization of fire departments will be considered, and an effort made to relieve them from political influences, and improve their discipline. It would be of great value in establishing rates of insurance upon an equitable basis, if blanks were furnished to all the depart-

* The President of the National Board of Underwriters (Mr. Oakley) says the actual loss cannot exceed $118,000,000. The Auditor of the State of Illinois places the loss at $153,000,000. The Board of Police have figured up a loss of $190,526,500.

† The Insurance Almanac, 1873.

ments, to secure a uniform return of the statistics of fires. At present, there is no system in the preparation of statistics by the chief officers of the different departments; and the returns printed in their annual reports are given in such a variety of forms, and are generally so unreliable, as to be of no practical value. It is not claimed that such statistics, however complete, would furnish a definite standard for the establishment of rates; but they would, as Captain Shaw says, supply some general principle, applicable to the ordinary risks of ordinary trades. "They cannot, of course, embrace the varied considerations which special cases involve, such as (independently of the important feature of moral risk) the foundation, material, situation, construction, and strength of the buildings themselves, as well as those adjoining; the quantity of the contents; the fact that these consist of the ordinary stock for which the buildings were originally adapted, or, as in many cases now, of very heavy overstock (a most important and essential point of inquiry, in the present condition of trade in London); the arrangement of the stowage of goods, with special reference to their classification and accessibility; the fact whether work is frequently done in overtime, or whether it is always done in ordinary working-hours; and many other matters which can only be ascertained by special survey on the spot." *

The records of the London Fire Brigade, during the period of thirty-three years, while it was under the control of the insurance companies, furnish some very interesting facts concerning the causes of fire. Of the 29,069 fires which occurred during that time, 3,218 were caused by the careless use of candles; 2,822 by curtains; 1,946 by foul flues; 301 by defective flues; 1,682 by gas; 1,255 by sparks from fires; 274 by spontaneous ignition; 471 by children playing with fire; 95 by children playing with lucifers; 406 by smoking tobacco; 155 by intoxication; 70 by naphtha lamps; 93 by lime slacking; 12 by lightning; 15 by hunting bugs; 34 by reading in bed; 2 by smoking in bed; and 3 by sewing in bed. Crinoline caused 3 fires; cats, 34; dogs, 9; a monkey upsetting a clothes-

* Records of the late London Fire-Engine Establishment, p. 9.

horse, and a jackdaw playing with matches, 1 each. The cause of 9,557 is unknown. It undoubtedly includes a large number caused by spontaneous combustion and by incendiaries. Under the latter head 133 cases are given in the list, covering only those in which convictions have been obtained. Recent investigations have removed the mystery which formerly surrounded many fires. It is not improbable that many persons have been convicted, upon circumstantial evidence, of setting fires for purposes of revenge or gain, when the fires were actually caused by spontaneous combustion. It has been shown by the experiments of Dr. McAdam, of London, that fires in flour-mills are caused by the gas evolved from flour dust and smut, which is liable to ignite spontaneously in certain states of the atmosphere, or to take fire from sparks emitted by the friction of the stones. The introduction of hot air, hot water, and steam-pipes, supposed to reduce the risk from fires by superseding to a great extent the use of stoves and open fireplaces, has, in fact, increased it, as the iron pipes, often heated to 400°, are frequently placed in close contact with floors and skirting-boards. Mr. Braidwood, in his evidence before a committee of the House of Lords, stated that by long exposure to a temperature not much exceeding that of boiling water, or 212°, timber is brought into such a condition that it will take fire without the application of a light. The time during which this process of desiccation goes on, until it ends in spontaneous combustion, is from eight to ten years.

The record of fires in New York, for two years (to April 4, 1872), shows that sixty-five were caused by the spontaneous combustion of chemicals, jute, oily rags, cotton, sawdust, and waste. The Fire Marshal of New York gives an account of some fires which had a very curious origin. In one instance, a fire broke out on Sunday night in a tea and coffee store. It was extinguished in season to discover that rats had made a nest between the ceiling of the first story and the floor above, by using oily waste taken from the engine-room in the basement, and this had ignited spontaneously. The stock was heavily insured, and had the fire proved disastrous, suspicion would inevitably have fallen upon the proprietor. A large piano-forte manufactory in Boston was set on fire last year by

a workman leaving a lighted pipe in the pocket of his coat. On returning from dinner he hung the coat above a pile of shavings, and the tobacco, burning through the pocket, fell upon the shavings, and soon set them in a blaze.

One of the most prolific sources of fire in this country is petroleum and its products. It is largely used by poor people, as it affords a cheaper light than gas. The oils which stand a fire-test of 110° are comparatively safe as illuminators; but a great variety of mixtures, which will not stand a test of 70°, and which are as explosive as gunpowder, are sold as "burning-fluids." In many places there are no local regulations to restrict the sale of these articles, and in those places where regulations have been adopted they are not properly enforced. Of the 1,380 fires which occurred in New York during the year ending April 4, 1872, 214 were caused by these products of petroleum. In Philadelphia, during the year 1872, there were 603 fires, of which 59 were from the same cause. In Chicago 39 fires out of 489 were caused by "lamp explosions." The percentage from the same cause is nearly as large in other cities.

A great many fires are caused by unprotected gas-lights in shop windows, and in manufactories where combustible materials are scattered about. In 1871 a law was passed in New York requiring all lights in show-windows to be protected by globes. Other prominent causes of fire in our large cities are defective flues, carelessness in the use of matches, overheated stoves and furnaces, and placing hot ashes in wooden receptacles. All these figure largely, in one form or another, in the returns of the fire marshals.

In the record of fires in London, from 1833 to 1866, classified according to trades, it appears that the largest number (7,321) occurred in private houses, and the next largest number (2,827) in lodging-houses. The fires in carpenters' shops numbered 1,164; in bakers' shops, 533; in booksellers' and stationers' shops, 442; in printing-establishments, 223; in warehouses, 208. As the record fails to furnish the whole number of buildings in the metropolis devoted to the purposes named, these statistics are of little value. The monthly summary of fires during the same period shows a remarkable uni-

formity in the number at different seasons of the year. The highest number (2,764) occurred in December, the lowest number (2,225) in October. In the daily and hourly summary it appears that the larger number occurred between eight and eleven o'clock, P. M. During the first twelve hours of the day there were 10,877 fires against 18,192 for the last twelve. Where a similar record is kept of fires in American cities, it is noticeable that there is substantially the same difference. Up to 1866 about one third of all the fires in London are recorded as serious. Since that year there has been a steady decrease in the proportion, — the number causing serious damage in 1872 being as low as eight per cent. In New York over thirty-five per cent of the fires for 1871 – 72 caused a loss exceeding one hundred dollars. The annual losses by fire are not given in the London reports, for the reason, probably, that they cannot be ascertained with any degree of accuracy. Those given in the American reports are estimates merely, and cannot be taken as a basis for any nice calculations.

During the last forty years the number of fires in London has increased from 458 to 1,494; but the increase has been marked by strange fluctuations. In 1870 there was an increase of 374; followed in 1871 by a decrease of 104, and in 1872 by a decrease of 348. During the same period the population of London increased with such regularity that the increase could be calculated quite accurately beforehand, even for a single year. The number of houses also increased in almost exact proportion to the population; one hundred houses never accommodating less than 738, nor more than 780 persons. There has been considerable difference in the ratio of increase between the fires and the population. In 1833 the population was about 1,700,000; in 1872, about 3,340,000; showing that while the fires have more than trebled, the population has not quite doubled. In this connection, the following tables of comparative statistics, which have been carefully prepared from original sources, will be of interest: —

	No. Dwelling-Houses.*	Total Loss for past 5 Years.	Loss per Capita.*
New York,	64,044	15,831,859	16 80
Philadelphia,	112,366	11,470,941	16.17
St. Louis,	39,675	4,124,130	13.26
Chicago,	44,620	9,068,041 †	30.39
Baltimore,	40,350	1,772,370	6.63
Boston,	29,623	3,271,118 †	13.08
Cincinnati,	24,550	3,576,766	16.56
San Francisco,	25,905	2,795,387	18.75

	Population.‡	Area in Square Miles.	No. Fires.	No. Steam-Engines.	No. Firemen.	Expenses of Department.	Expense per Capita.
London,	3,340,000	122	1,494	28 §	396	£ 68,617	5 *d.*
New York,	980,000	22	1,380	38	629	$ 997,266.67	$ 1.02
Philadelphia,	709,000	129	655	24	353	407,737	.57½
St. Louis,	360,000		197	11	110	166,315	.46¼
Chicago,	380,000	23¾	489	16	201	382,000	1.00
Baltimore,	281,000	15	172	10	151	160,635.46	.57
Boston,	260,000	15½	389	21	459	400,000	1.54
Cincinnati,	221,000	22	213	19	154	281,935	1.27

The London Fire Brigade was organized by the famous Captain Braidwood in 1833, the funds for its maintenance being subscribed by ten fire-insurance companies, each contributing according to the amount of its business. Previous to that, there was a force of three hundred parochial engines, under the superintendence of beadles and parish engineers. Private engines were kept by some of the insurance companies. On the 1st of January, 1866, the Metropolitan Board of Works took control of the fire establishment, under the authority of an Act of Parliament.‖ In addition to the engines, stations, etc., which were delivered to this board gratuitously, the insur-

* The loss per capita is based on the census of 1870, as it would be a fair average for the years covered in the statement of losses.

† Exclusive of the great fire.

‡ In the American cities the census of 1870 is taken, and the natural increase for two years added.

§ Including three floating engines.

‖ 28 and 29 Vict. cap. 90.

ance companies then supporting the establishment (twenty-eight in number) were required to contribute thirty-five pounds per million on their annual insurance. The property of the department on the 1st of January, 1873, consisted of 50 fire-engine stations, 106 fire-escape stations, 4 floating stations, 52 telegraph lines, 84 miles of telegraph lines, 3 floating steam fire-engines, 1 iron barge to carry a land steam fire-engine, 8 large land steam fire-engines, 17 small land steam fire-engines, 16 seven-inch manual fire-engines, 56 six-inch manual fire-engines, 13 under six-inch manual fire-engines, and 125 fire-escapes. For the purposes of the Metropolitan Fire Brigade, the metropolis is divided in four districts. The force consists of 4 foremen of districts, whose pay is fixed at 10 *s.* per day; 30 engineers, at 6 *s.* per day; 30 sub-engineers, at 5 *s.* per day; 60 first-class firemen, at 4 *s.* 6 *d.* per day; 60 second-class firemen, at 4 *s.* per day; 60 third-class firemen, at 3 *s.* 6 *d.* per day. The fourth-class firemen consist of those who are new to the service, and their pay is 3 *s.* per day. All the members of the brigade live at the stations to which they are attached; foremen and engineers have their rent free, and coal and gas are allowed to them; sub-engineers and firemen pay for their quarters at the rate of 1 *s.* to 2 *s.* 6 *d.* per week, according to the accommodation afforded to them. Married men's quarters are not provided until the men are promoted to the second class. There are four medical officers appointed for the brigade, one for each district. They are paid 20 *s.* per annum for each man in their respective districts, — that sum to include medicine, surgical appliances, and attendance of every kind; no extra charge whatever is allowed. There is also an examining surgeon to the whole brigade, who receives 10 *s.* 6 *d.* for the examination of each candidate referred to him for that purpose. The men are provided with a uniform, and are required to give personal security in the sum of £ 10 "for their clothes, and the due performance of their duties." In case of an officer or fireman being killed in the discharge of his duty, his widow is provided for by an annuity. On the death of a member of the brigade, £ 5 are given to the widow or family, for burial expenses. The members are not allowed to receive gratuities for services rendered in the discharge of

their duty. One shilling is paid for calls, or notifications of fires.*

The New York department is organized on a strictly military basis. The city is divided into nine battalion districts, and fifty company districts. The force consists of a chief engineer, with a salary of $4,700 per annum; 12 assistant engineers, with a salary of $2,200 each per annum; 52 foremen, with a salary of $1,500 each per annum; 52 assistant foremen, with a salary of $1,300; two engineers to each steamer, with a salary of $1,300; 8 firemen to each company, with a salary of $1,200. The men receive regular instruction in their duties, and perform patrol service in their several districts. They are governed by general or special orders, issued from head-quarters in military form. The apparatus consists of 38 steam-engines (one a self-propeller), with tenders carrying hose, and 15 hook and ladder carriages. Under the new charter, the department is managed by a board of three commissioners, appointed by the Mayor for a term of six years. There are three bureaus in the department: one charged with the duty of preventing and extinguishing fires, and protecting property from water used at fires, the principal officer of which is called the Chief of Department; another charged with the execution of all laws relating to the storage, sale, and use of combustible materials, the principal officer of which is called the Inspector of Combustibles; and another charged with the investigation of the origin and cause of fires, the principal officer of which is called the Fire Marshal.

The departments in Paris, Berlin, and other large cities on the Continent of Europe, are organized in a manner so entirely different from ours that they can hardly be compared, except as to the results accomplished. With inferior apparatus (mostly hand-machines of little power) they accomplish far better results in the preservation of property from fire than the American departments; but how much is owing to superior discipline and training, and how much to the superior construction of the buildings, it is impossible to tell. Their success is largely due, undoubtedly, to the celerity with which

* General Rules, etc., of Metropolitan Board of Works, revised to 25th November, 1870.

they bring their forces to bear. They recognize the fact that a small quantity of water, properly applied, in the early stages of a fire, is more effective than a large quantity a few minutes later. Although the telegraph is not made use of so extensively for giving alarms as in our cities, the men whose duty it is to put the fire out are, on the whole, more promptly notified. In Berlin no public alarm is given upon the discovery of a fire. The fact is telegraphed from the nearest police station to all the fire-stations in the city, and the corps designated for duty responds on the instant. It should be stated that the city is divided into a large number of police districts, and that the whole fire department can be called out by this system in two minutes.

The defect of the American system is the uncertainty of having an alarm given when the fire is first discovered, or when it ought to have been discovered. The police departments in most of our cities are not organized in such a manner as to make it safe to rest the entire responsibility upon them; and, unless there is some penalty for neglect, the citizens generally cannot be relied upon with any degree of certainty to aid in the matter. The defective construction of our buildings makes it imperatively necessary, in order to prevent a repetition of the disastrous fires of Chicago and Boston, that the attendance of the firemen should be sure and prompt.

Since the foregoing was written, Mr. Joseph Bird's book on "Protection against Fire" has been published. The author has collected a great amount of curious information in regard to the origin of fires and the best manner of extinguishing them, and has produced a book as entertaining as "Pepys's Diary." It covers a wide field of personal observation and reading, and although it cannot lay claim to much consideration as a literary or scientific work, it is entitled to a good deal of consideration for the practical suggestions which it contains for the security of life and property. The purpose of the book is to impress upon the people the importance of providing means for the extinguishment of fires as soon as discovered. The comments of Captain Shaw on the neglect of our departments to provide such means have already been given. In a discussion before the London Society of Arts, in 1863, Mr.

Baddely, the experienced engine-builder, said: "Of all modern inventions for fire-extinguishing purposes, nothing, in my opinion, is so really useful as the little hand-pump. Many years of controversy ensued before the late Mr. Braidwood could be brought to regard the hand-pump with favor. The result of the experiments with the little hand-engines was so satisfactory that every fire-engine in London travels with one; and they have been the means, in the hands both of firemen and civilians, of saving thousands of pounds' worth of property."

Mr. Bird's plan is to have the fire departments of cities composed of two brigades: the first to have charge of the heavy apparatus now in use (the steam-engine to be altered so that steam may be thrown into buildings where the flames have not burst from the doors, windows, or roof); the second brigade to have charge of the light apparatus. He would have a small engine, three buckets, and one axe placed in every large building used for the storage of combustible materials, or for manufacturing or public purposes, with a card of directions as to their use; at the expense of the owner or occupants of the building. In certain dwellings, work-shops, and stores he would have small engines placed, at the expense of the city, so near each other that one of them can be brought into use within one minute from the time a fire is discovered in any building situated in the thickly settled portion of the city; these engines to be operated by volunteer organizations.

In Paris there are (or were in 1866) one hundred and thirty fire-stations, with one hundred and eighty engines, and an organized force of twelve hundred men, divided into ten companies. One corporal and two firemen are constantly on duty at each station. The engines in use are so light that they can be carried into the upper stories of a building if necessary. This distribution of the fire apparatus enables a number of trained firemen to be on the spot within a minute or two after a fire is discovered.

While Mr. Bird's plan would be an improvement on the methods in use in this country, it is somewhat doubtful whether it would accomplish all that he claims for it. Its success depends too much upon the efforts of inexperienced persons. The present condition of society in our large cities is not favorable to the performance of neighborly offices. The serious

business of putting out fires will be left to those who are paid to do it. The great point is, after all, to secure for the service men who will use such apparatus, and distribute it in such a manner, as will produce the best results.

During the last two years a great many ingenious contrivances have been introduced for the speedy extinguishment of fires; but it would exceed the limits of this article to attempt any description of them. In order to stimulate invention in the proper direction, the National Board of Underwriters should organize a standing commission, composed of competent engineers, to test the various kinds of apparatus in use or proposed, and report from time to time upon their efficiency. The commission would also be able to perform a great public service by establishing general rules for the management of fire departments, the preparation of statistics of fires, and a standard for hose and hydrant couplings.

JAMES M. BUGBEE.

ART. V. — *Biographical Sketches of Graduates of Harvard University, in Cambridge, Massachusetts.* By JOHN LANGDON SIBLEY, M. A., Librarian of Harvard University, and Member of the Massachusetts and other Historical Societies. Vol. I. 1642–1658. With an Appendix, containing an Abstract of the Steward's Accounts, and Notices of Non-Graduates, from 1649–50 to 1659. Cambridge: Charles William Sever, University Bookstore. 1873.

AT the right time, and eminently from the pen of the most, if we might not say the only, competent person for the accomplishing of it, Harvard College, as she graduates her two hundred and thirty-second class of alumni, receives from her diligent Librarian this labor of his love. Up to this year the number of her graduates, classified on the Triennial Catalogue, was 11,553. Of these, almost half, as the solemn and suggestive note reads, *E vivis cesserunt stelligeri.* Of ninety-eight of these who have been the longest among the stars, and who were the first to receive the rude yet tender nursing

of the wilderness College, and to lead off, with honor and love, the line that is to follow them, we have here the memorials in adequate biographical sketches. So much time has spared to us. So much a diligence and a devotion for which there is no reward but in the love which prompted them have gathered and gleaned for us from the search through more than a third of a century into all the nooks and hiding-places of history.

Mr. Sibley has special and eminent qualifications for the task which he has here undertaken. Though the College numbers among its alumni many who take a fond pride in its history, and would gladly search out every historic fact relating to it, and though the taste and skill for such investigations characterize a fair proportion of our studious men, it may be fairly affirmed that no ten persons among us, combining their labors and resources, could have so faithfully or successfully accomplished the work which he has performed. Pecuniary compensation is of course out of the question. This is one of those labors in which the pleasure of congenial toil must offset the outlay of time and all the incidental expenses incurred by journeys, correspondence, the collection of materials, and the remuneration of helpers. More than a score of years ago Mr. Sibley gave proof that he possessed all the best qualities of an intelligent, accomplished, and painstaking investigator, in his "History of the Town of Union, Maine," the place of his birth. This is a model work of its kind, for authenticity, distribution of subjects, exhaustiveness of details, and vivacity and perspicuity of style. Having been appointed Assistant Librarian at Harvard in 1841, and Librarian in 1856, he has ever since been accumulating materials and maturing a wise and apt method for his present work. He has had at hand a large part of the books and papers containing the information he has needed, and he has had the training and practice which have taught him where to look for what he desired from outside sources. He for the first time edited the Triennial Catalogue in 1842, as it had never been edited before; and ten times since the successive issues of that ever-interesting and expanding publication, so eagerly sought for by the graduates, have shown more and more of the fruits of his diligence. Obituary dates were for the first time attached by him to the names in the Trien-

nial in 1845. When the late Professor Sidney Willard, in 1855, was preparing for the press his "Memories of Youth and Manhood," Mr. Sibley, in answer to his request, addressed to him a letter, printed in the Appendix to that work, giving full particulars about the measures adopted by himself for collecting and preserving materials for biographies of the graduates of the University. The system thus instituted has been very effective for recent years. But the ascertaining of the true dates to be affixed to the star-bearing names of the deceased graduates for nearly the whole of the first two centuries of the College has been a task which very few persons would have cared to assume. Mr. Sibley wrote, in 1855, that for that purpose he had then examined "with great care several thousand volumes, and probably more than twenty thousand pamphlets."

The coming to the light of a Treasurer's old College account-book and the discovery in an office in London of an early and unique catalogue of graduates were occasions which prompted and furnished Mr. Sibley with material to communicate to the Massachusetts Historical Society, for its Proceedings in 1862 and 1864, two very valuable papers of curious information. And while he has been faithfully fulfilling his official duties as Librarian in the College, gathering from all sources, largely by personal application, treasures new and old for shelf and cabinet, and continuing and perfecting the improved system of cataloguing by cards, he has given his few spare hours, principally of the night, and in his own home, to the unwearied exacting toil of preparing these biographical sketches.

The laborious but congenial task to which Librarian Sibley has devoted himself can hardly fail to suggest to his more appreciative readers the name of old Anthony a Wood and his *Athenæ Oxonienses*. Nor is this by any means a comparison of small with great things. On the contrary, both for the general subject and for the details which enter into its treatment, we should be disposed to claim for our Cambridge historiographer an equal merit and dignity in his theme, and a relatively equal importance in the men and their accomplishments set forth in his pages. Strip the scholars, prelates, and placemen commemorated in the Oxford folios of all their adventitious and impersonal consequence derived from their con-

nection with the social and ecclesiastical privileges accruing to them, and they themselves will stand forth as no more than the peers of many of our Cambridge graduates. And as to the works, the life labors in literature, which Wood with such elaborate minuteness has set down after the names of those who can be called authors, it would appear from his pages that very many of these were still in manuscript when he mentioned them, and have never yet emerged from that condition, even if still extant. And how few among all that attained to the honor of print have a living interest, or are worth the paper used to put them into books! As we have recently turned over the pages of those two folios, amplified by Bliss into four quartos, we have had a new reminder of De Quincey's ingenious speculations and estimates about the number of all the mountain heaps of books which are worth reading, of the proportion of them that any one would be likely to read, and how many among them all one would be the wiser or better for reading. Wood, covering a period of less than two centuries, gives us the names and the titles of the works or writings of nearly one thousand Oxford alumni. He tells us of his own natural proclivities, taste, and aptness, even from his boyhood, for the dry and almost mechanical task to which he devoted a long life. Unmarried, with no fondness for women or children, no inclination for social pleasures, he made himself a recluse, and, in fact, a literary hermit. He lived very frugally, depending on his own moderate patrimony. His intercourse with his fellowmen was mostly by correspondence for obtaining information, though he allowed himself occasionally to share the hospitality of a few tolerant persons who were in possession of documents which he wished to examine. He occupied a den in a tower-garret of Merton College, with the materials of his toil heaped around him, which no profane hand was allowed to touch for the sake of dusting or arranging them. He would shuffle out in a seedy array to take his exercise when the highways and lanes were deserted, and drop into an alehouse or a victualling-shop to satisfy his appetite, which was neither craving nor fastidious. He would go to any distance to hunt out from memorial windows, from sepulchral stones or brasses, and from parish registers anything which his mousing diligence could

turn to service for his *Athenæ* or his *Fasti*. His *Antiquitates* were first published in 1674; his *Athenæ*, in 1691. He himself records, under date of 1694, that, at a festival in Trinity College, the Senior Proctor, Altham, spoke "dishonorably of the historiographer of Oxford, by calling him *scurra* and *calumniator;* one that in his late book he published, spoke of the vices and omitted the virtues of men; that he had Lynceus his eyes, prying and peeping as a spy. This was to please his dean, Dr. Aldrich, then vice-chancellor, who sat just behind him, and who beforehand had taken part with the Earl of Clarendon."

The reference in the last line is to the prosecution of Wood by the Earl Henry Hyde, for the charge of bribery in the *Athenæ* against his father, Edward, the Lord Chancellor Clarendon. The poor antiquarian was for this banished for a season from the University, and mulcted in a fine of £ 40, — the amount being appropriated to the purchase of three statues for niches to the Physic Garden.

The sharp and bitter sentence which the aforesaid Senior Proctor pronounced against Wood may be taken as significant and characteristic of the general judgment expressed concerning him by many who have been indebted to his labors. But it is manifestly unjust. Wood has received but scant returns of appreciation for his priceless toil and his immense diligence of research. He was, indeed, somewhat morose and querulous, as all such musty delvers in things the greater part of which might better be forgotten are apt to be. He affected a quaint and piquant plainness, and sometimes severity, in tone. He lived through distracted times, when his conservatism in matters of Church and State caused him much wretchedness. He was horrified and disgusted by the inquisitorial and revolutionary dealing with the Universities. He hated the non-conformists. He was accused of being secretly a papist; which, however, he was not, for he lived and died in communion with the English Church, partook of its last sacrament, and avowed his love of it in his will. But he sprinkled his pages liberally with the spice and pepper of his dislikes and prejudices towards individuals, and he knew how to use his sting to avenge an indignity or an insult to himself. When towards his last days the old man was crawling out suffering under the torments of

the malady — a suppression of the contents of the bladder — which brought him to his end, he met with Dr. South. To the inquiry of that famous and sharp-tongued wit, as to what ailed him, he frankly defined his trouble. Dr. South replied "that if he could not make water, he must make earth." This ungracious and unsympathizing reminder of the certainty and nearness of his doom touched the irritability of the antiquarian, and it is said that he went at once to his den, and wrote out that not complimentary sketch of Dr. South which appears in the *Athenæ*.

But considering Wood's intense dislike of the non-conformists, such of them as he, in common with Mr. Sibley, has to mention, because of their connection alike with our Cambridge and the English Oxford, have but little to complain of from his pen. He himself avowed that he found it difficult to obtain, at first hand, information about non-conformist scholars and their works. They, on the other hand, were not inclined to put themselves at his mercy. Hearne, in his account of Wood, speaks of "the three sorts of men with whom he held converse by letters." Two of these were "those of the Church of England" and the Roman Catholics. The third class, he adds, were "the non-conformists, from one or two of which, of learning and candor, the author was much informed. But the generality of this sort of men, whilst under a cloud of persecution, as they call it, were very shy and jealous of imparting what was inquired concerning their writers, not knowing what use might be made of such communications to their disadvantage. If, therefore, what is said of their writers seem less satisfactory, the author is not to be blamed, having been forced to be silent of some of their writers, or else to use testimonies of them from those of another persuasion."

The Mathers, especially, were treated with fulness and impartiality by Wood. Happily Mr. Sibley has been able to explain this fact to us. When President Increase Mather was in London, in 1690, as agent of Massachusetts after the Colony charter had been vacated, he there became acquainted with old Anthony, who asked and received from him information that was desired concerning some non-conformist writers. Wood returned the courtesy by sending Dr. Mather a presentation

copy of his *Athenæ*. This copy, on being sold at auction in Boston, in 1869, was found to contain two manuscript letters of Wood to Mather, which Mr. Sibley copies. Wood accepts the offer which Mather makes him of New England books, and adds, "Why do you not give me an account of yourself, that I may bring that in when I speak of your father? In the last term catalogue I saw the title of a book by you published." Wood certainly writes as a gentleman in these letters, and avows his desire to be catholic and impartial in his memorials. "I must collect all," he says, "whether conformists or non-conformists, papists or of any other religion; I am not to look upon them or esteem them as to their opinions or writings, but only as they are writers." Mr. Sibley has given much fuller and more particular information concerning the persons with whom he has to deal in common with old Anthony.

There were, at one time, in the neighborhood of Harvard College, intimations, not to say apprehensions, that the work, which Mr. Sibley has wrought with such ability, thoroughness, and appreciative kindliness of spirit and judgment, was to be undertaken by a son of the College who had some striking affinities of character, temper, and experience with old Anthony Wood. The late Mr. Jonathan Peele Dabney, who graduated in 1811, and died in 1868, hung around the old College halls for the most part during the whole interval of years between those dates. He was neither married nor fond of the fruits of marriage of other persons. In look and garb, in habits of life, and sometimes in his speech and in his views of life, he showed the lack of those specialties in his aspect, ways, doings, and sentiments which the scholar especially needs to humanize and harmonize him. It was understood that he was collecting materials for memoirs of at least a portion of the graduates of the College. Whether they have been preserved, or what may be their extent or value, we are not informed.

All the recent alumni of Harvard, and all of earlier date who have retained a connection with and a living interest in it, will accord in the judgment that of all its sons, alive or at rest, Mr. Sibley could most adequately and impartially perform the grateful task that came into and has now come from his hands. Besides those primary qualities of research, thoroughness, care

for accuracy, and mastery of the field, which were so necessary and essential, he has no partialities, prejudices, or personal bias to indulge. His aim has evidently been to serve the high cause of truth in history and biography; to be just, candid, considerate, and kindly, as well as discriminating.

We will now digest some of the details that demand notice after our examination of this volume, and then enlarge upon a few of the incidental subjects which its contents suggest with chief interest. This is a first volume of what we hope will prove a series from the same pen. It is understood that the materials for other volumes in various stages of completeness are in hand. Indeed, the circumstances under which this has been prepared, and the researches which it has required, have necessarily covered the field which is only to be more systematically wrought to fill out the series of volumes. But in thus glibly speaking of our anticipations, and of the means for realizing them, we must assure the author that we are not unmindful of the toil which the fulfilment will exact from him.

Mr. Sibley tells us that he began collecting the materials for his book in 1842, which was just two hundred years after the first class graduated from the College. This was done by him on his reluctant acceptance of the appointment by the President and Fellows to edit the Triennial Catalogue. Though no one before him had even undertaken what he has accomplished, some four or five persons had contributed fragmentary and imperfect information in interleaved catalogues. These were obtained by Mr. Sibley, and gradually a method was developed by him for searching through documents in print and in manuscript, through a wide correspondence and the most extended inquiries for obtaining and verifying facts. His method, so far as it concerned the times and records of the long past, was amplified and supplemented by arrangements and devices to secure from all living graduates, and from the members of the successive classes while in College, their own personal contributions, to be carefully arranged and preserved in the library, so that the work which has cost him so much labor for the earliest alumni may be facilitated for any one who may at any future time continue his memorials. The materials which Mr. Sibley had, and the method just referred to,

are described at length in his Preface. There is a paragraph in this Preface which contains the only boastful or laudatory utterance about the College in which Mr. Sibley indulges himself. We write those epithets, *boastful* or *laudatory*, not because we should allow their fitness in the case, but because they might be used by some to characterize the passing encomium upon the author's Alma Mater. For ourselves, we regard this encomium as just and moderate even, in view of the facts. Summing up the effect on his own convictions and feelings of his keen research into the lives and characters of the dead, and of his intimate acquaintance with the careers of so many of the living graduates, the author writes: —

"Going back to the early classes, I observed that several of the members went abroad and took an important part in public affairs in Europe. Of those who remained in this country, nearly all, from the great respect entertained for scholars and clergymen, exerted a commanding influence; and most of the offices of honor and trust were filled by them. They originated or urged forward the ideas and principles on which our government now rests, and which, in their expansion, are to-day agitating the world, and ameliorating the condition of mankind. Their lives and the history of the country were so interwoven that the knowledge of both is necessary to the proper understanding of either. There is probably no instance in history where the same number of young men, taken indiscriminately from various classes of society, and trained under the same auspices, have afterward, in their various spheres, exerted greater influence on the politics, morals, religion, thought, and destiny of the world than the early graduates of Harvard University. The institution itself was always in advance of public sentiment. . . . . Graduates opposed to religious intolerance and exclusiveness, and to political oppression, were constantly conspicuous as champions of progress in religious and legislative bodies and in popular assemblies," etc., etc.

An Introduction, which we wish might have been more extended, gives us very concisely the principal facts concerning the votes and measures of the General Court of the Colony in founding and first administering the College, with extracts from the public records and from a very valuable tract printed in London, in 1643, which is largely occupied with the affairs of the College, and with an account of the first Commencement. Our own inquiries and researches satisfied us years since with

a conclusion which we have seen no reason to qualify or change, that though the Court of the Colony deserves all the praise that it has received for voting a sum of money equal to one year's amount of the tax or rate levied for public charges, for the noble enterprise of planting the College in the wilderness, where all was then poor and rude, yet the institution was really established, as it has ever since been sustained, mainly by private individual beneficence. John Harvard was more than the godfather of the College. We doubt whether a class would have graduated from it in 1642, if his death, in 1638, had not put into its treasury a sum at least double of that which the Court had voted. We have our misgivings, likewise, whether the original vote of the Court took effect according to its terms.

A most scandalous and humiliating discomfiture attended the first year of the life of the College, connected with the utter unworthiness of the man to whose charge its first pupils had been confided. This was Nathaniel Eaton. As we find his name used oftener without than with the prefix of *Reverend*, we prefer to omit it here. Happily he had not reached the honor of being called President, — Dunster being the first head of the institution so designated. While under Eaton's charge, and in the proceedings necessarily taken against him, it is called a school, and he is called a schoolmaster. Some of the scholars boarded with him. He was a tyrant, a hypocrite, and a defaulter to every obligation; seeming to possess a passion for cruelty. His wife was a slattern and a vixen; and in her domestic oversight of the boys who boarded and lodged with her she was stingy, unfeeling, and even something worse. The pair more than realized, in actual life and conduct, the worst characteristics of the establishment of Mr. and Mrs. Squeers, at Dotheboys' Hall. The proceedings against Eaton and his wife are on record in our State House, and the files of court or legislature all the world over could scarcely furnish documents of a more extraordinary tenor. Eaton was convicted, and finally brought to the confession of brutality in his punishments; and his consort, on her part, also confessed to deficiencies and offences in her table arrangements, which leave us in doubt whether the husband or the wife was the more odious character of the two.

Eaton managed, by trickery and flight, to escape from the righteous judgment of the Church and the magistrates; and his subsequent career abroad never retrieved his shameful course here. The letters of the time contain many references to what Governor Endecott describes as "his base cariadges," and to "the great sommes of money" constituting his indebtedness to the many victims of his hypocrisy. There is a letter extant addressed to Governor Winthrop, by a poor waif of a youth named Nathaniel Rowe, who says he was sent from England to this country by his father "verie hastelie and overmuch inconsiderately." He adds that he fell under the charge of Eaton, "to be instructed in the rudiments of the Lattine tongue. I lived with him about a moneth, and verily in that space he spake not one word to mee, *scilicet*, about my learninge, and after he went awaie, I lived an idle life, because I had noe instructor." But more cheerily he goes on: "This last half yeare [1641] hath binne spent in receiveing instructiones frome Mr. Dunster, whoe (blessed be God for it) hath biene a guide to leade mee onne in the waie of hummane literature, and alsoe in divine."

Eaton was a younger brother of that honored and revered man, Theophilus Eaton, a founder of the colony of New Haven, its first governor in 1639, and re-elected as such till his death, in 1658. Writing to Governor Winthrop, in 1640, he thus refers, with touching sadness and mortification, to his brother's course: "I can neither write, nor indeede thinke of my brother's miscariages without griefe and shame. He who searcheth the heart knew what sapp ranne within when the fairest leaves appeared outwardly, but his late, and I feare present fruite hath bin exceeding bitter, and his state the more dangerous, because I feare he is but a little sensible of it, besides much dishonour to the great name of God. I heare he hath bin very injurious to sundrie men, the particulers I fully understand not, nor as yett how farr my self am interested in his sinfull projects, &c."

But there was a vigor in the seed which had been planted, and a patient, resolute, and ever-hopeful devotion and perseverance in the hands and hearts of those who fostered its germ and its growth, which have fulfilled in the College the Scripture

parable of the mustard-seed. We think that there is no parallel case to be quoted in all history in which the original and feeble first agents in any noble human enterprise, that has developed and flourished into full and proud success, ever had in view, from the first, so clear a regard to the welfare of their posterity, with a fixed assurance that what cost them so much and returned them so little would prove the richest of blessings to unnumbered generations, as did the founders of Harvard College. Many "colleges" have since been planned and started in the United States, — a great many more than will ever attain to a first century of their existence. There are "universities," also, which are at present struggling in the stages of preparatory and high-school and academy life. Some of these have been founded with degrees of the same nobleness of purpose, and far-reaching regard to the welfare of coming generations, in like straits of poverty, lowliness, and self-denial, as characterized the planting of Harvard. Many more of them are the offspring of sectarian zeal, and depend upon limitations and exclusiveness for what they have of vitality. Of late years a few men who have accumulated enormous wealth have at their own separate charges founded colleges to bear their own names. Harvard still leads the line in wealth and in stability, and is yet the youngest in vigor and expansiveness.

Before following the course of Mr. Sibley's pages, we are prompted to dwell upon one or two matters which his volume suggests, though he could not afford space to pursue them.

One of the most interesting incidental points connected with the founding and the early years of the College is that which concerns the efforts made in it for the thorough training of Indian youth. It is true that the name of only one Indian graduate appears on the catalogue of the alumni of the College. But this can by no means be admitted to be a fair index of the actual facts in the case, nor even of the results, unsatisfactory and disappointing as on the whole they were, of the aims had in view, and of the ends reached by the founders and friends of the institution in behalf of the aborigines. On the contrary, it may well be believed that every additional particular of information bearing upon this subject that comes to our knowl-

edge, from diaries and original records, gives us new evidence that, for a time at least, the earnest and devout men of the wilderness Colony divided their care equally between the Indian and the English youth of that generation. Certain it is that the first substantial building reared within the College grounds, the costliest and the strongest, was a brick edifice known as the "Indian College." It is a fact, likewise, that many of the English youth in the College, while mastering in their course the classic and the sacred tongues, were devotedly engaged in learning the barbarous language of the natives. Quite a number of the first graduates who became ministers of the constantly multiplying churches of the jurisdiction qualified themselves to preach and pray in Indian, and to aid in the labors of the press, which were soon pursued in the Indian College, in translating primers, grammars, and tracts, for the use of the natives. The stupendous, and, we must add, the profitless and wellnigh fruitless task of turning the whole Bible into Indian was an enterprise which could hardly have been accomplished without help from the resources of the College, scanty as they then were. Indeed, that accomplished work, with all its incidental requisitions, toils, and sacrifices, and, especially in the purpose and motive of piety which prompted and which alone could have carried it through, may justly be set forth as a full offset to the saddening and harrowing pages of our history of the wastings and desolations of the natives on this soil, as the white men extended their occupancy. The personal discomforts, privations, and actual sufferings endured by such men as Eliot, Gookin, the Mayhews, Cotton of Plymouth, and others, in their converse with the Indians, not having been fully set forth by either or all of them in detail, because of the singleness of spirit and fidelity with which they were readily encountered, can hardly now be adequately recalled by any efforts of our imaginations. To share by day and night the filthy sties which we call wigwams, to come in contact with the unsavory and vermin-covered inmates, to partake of their disgusting food, unwashed, uncooked, unsalted, served generally on a chip or a piece of bark, and with the utensils of nature, and in doing all this not to wound the savage's pride of hospitality, — these were but the external conditions of the un-

dertaking. To catch the guttural utterances of the host and his squaw, to establish a mental or spiritual relation with them in order to discover their range of impressions and ideas as related to or expressed by their grunts and their sign language, to master the method of nature's grammar, and to learn the law, if there was one, of the augments and inflections and compositions of words, some of which Cotton Mather thought had been growing in length ever since the confusion of tongues at Babel, — these were conditions in which the pupils found no help in any such resources as Max Müller has recently furnished for more favored pupils. To reduce this Indian language to writing, to be transferred to type, and then, in its poverty of terms and the narrowness of its range as a vocabulary answering to the inertness and limited activity of the savage mind, to find words as equivalents for those in the Hebrew, Greek, and English Scriptures, were other exactions of the enterprise. That the translators managed, in a way which even to any extent satisfied themselves, to find in, or to put into, the articulate speech of these children of the woods terms equivalent to those used in describing the tabernacle and the Levitical services, in conveying the figurative burdens of the Hebrew prophets, and in setting forth the technical phraseology of the letters of St. Paul, whence has come the metaphysical theology which has distracted Christendom, is a marvel the depths of which no one now living can fully sound. Perhaps Mr. J. Hammond Trumbull can cast a plummet deeper into it than any other of our scholars. It would indeed be a curious, if not a profitable task, for a skilful linguist to offer to us an illustrative essay of the way and means by which the Nonantum chief, Waban, Eliot's favorite convert, was "seasoned in the divinity" of the great Apostle, and instructed in the ritualism of the children of Israel. These were lively subjects for the first students of Harvard College. But we are not aware that any "Examination Papers" relating to them are now extant.

When Edward Winslow of Plymouth was in London in 1649, as agent of that and the Bay colonies, he by his solicitations induced the Parliament to incorporate a society for the educating and evangelizing of the Indians. It was with means and help furnished by this society from the first, and afterwards

by its renewal and more perfect organization under Charles II., that the College was enabled to direct so much of its early zeal into a channel of simple benevolence. Everything that aided to make the infant seminary a centre and fountain of educational activity gave assurance of its promise of permanence and expansion.

The single-hearted and devoted Daniel Gookin, of Cambridge, who had been commissioned by the General Court of the Colony to govern and oversee the Indians, completed his Historical Collections concerning his work and the subjects of it in 1674, and dedicated them to Charles II. The manuscript was not put into print until 1792. Gookin offers to the king the following, as a piece of cheering information: —

"One thing falls in here fitly to be spoken of, as a means intended for the good of the Indians, which was the erecting a house of brick at Cambridge, in New England, which passeth under the name of the Indian College. It is a structure strong and substantial, though not very capacious. It cost between three and four hundred pounds. It is large enough to receive and accommodate about twenty scholars, with convenient lodgings and studies; but not hitherto hath been much improved for the ends intended, by reason of the death and falling off of Indian scholars. It hath hitherto been principally improved for to accommodate English scholars, and for placing and using a printing-press belonging to the College. This house was built and finished [probably in 1665] at the charge and by the appointment of the Honorable Corporation for propagating the Gospel in New England."

The Commissioners of the United Colonies in New England had previously, September 5, 1661, in an Epistle Dedicatory to the King, offered to him Eliot's "Indian Version of the New Testament," in print from Cambridge, thinking that as he came "to his crown in peace," it would greatly gratify him "that himself should be the first Christian prince, unto whom a work of this nature should be presented and dedicated."

In this epistle the following summary statement is made of the primary successes of what proved to be a forlorn undertaking: —

"The other part of our errand hither — that we might be instrumental to spread the light of the gospel, the knowledge of the Son of God, our Saviour, to the poor barbarous heathen — hath been attended

with endeavors and blessing; many of the wild Indians being taught and understanding the doctrine of the Christian religion, and with much affection attending such preachers as are sent to teach them. Many of their children are instructed to write and read; and some of them have proceeded further to attain the knowledge of the Latin and the Greek tongues, and are brought up with our English youth in university learning. There are divers of them that can and do read some parts of the Scripture, and some catechisms which formerly have been translated into their own language."

In the account of expenses sent by the commissioners for the society to the Honorable Robert Boyle, its governor, or president, in September, 1662, among sundry items of charges for books, etc., for Indian pupils, for their teachers in various places, and for two "Indian coats," are these specifications: —

"To diet, clothing, and tutorage of two Indian youths at the College, one year past, with extraordinary expenses at the entrance £ 44. 12. 3. To the schoolmaster at Cambridge [Elijah Corlet], for two Indian youths £ 8. 0. 0."

Writing of the many laborers employed in the various New England settlements "for the education of sundry Indian youths," the commissioners add, in 1662: —

"Two whereof have been, the year past, brought up in the College at Cambridge, where they have good commendations of the President and their tutors for their proficiency in learning. Also two others are at the grammar-school, and two more at the English school where they learn to read and write; one whereof is now fitted for the grammar-school, besides many others that are instructed by schoolmasters in other places to read and write. It hath pleased the Lord to frown upon our endeavors in this kind: taking away by death, at sundry times, six youth or more, upon whom considerable cost had been expended for their education, wherein it very well becometh us and all herein concerned humbly to submit unto His sovereign pleasure."

It thus appears that quite a considerable number of Indian boys were put under preliminary training, most of them in their childhood, with a view to qualifying them for the College course. The expense was heavy, perhaps occasionally relieved by a contribution of beaver-skins from their fathers, or of a day's work from their mothers. Their clothing, food, and

books had all to be furnished them in charity. Gookin says: —

"In truth the design was prudent, noble, and good; but it proved ineffectual to the ends proposed. For several of the said youth died after they had been sundry years at learning, and made good proficiency therein. Others were disheartened and left learning after they were almost ready for the College; and some returned to live among their own countrymen, where some of them are improved for schoolmasters and teachers, unto which they are advantaged by their education." Others, he says, "pursued various callings. One is a mariner, one a carpenter, one went to England, where he soon died."

The College catalogue bears the name of only one Indian graduate, Caleb Cheeshahteaumuck, in 1665, probably the year in which the Indian College was built. He died the next year. It would seem that but one more of the native stock so nearly completed the College course as almost to have entitled him to appear on the list. The account which Gookin gives, from his personal acquaintance, of these two young men is so interesting and affectionate in its tone that it may well be copied here: —

"I remember but only two of them all that lived in the College at Cambridge; the one named Joel, the other Caleb, both natives of Martha's Vineyard. These two were hopeful young men, especially Joel, being so ripe in learning that he should within a few months have taken his first degree of bachelor of art in the College. He took a voyage to Martha's Vineyard to visit his father and kindred a little before the commencement; but upon his return back in a vessel with other passengers and mariners suffered shipwreck upon the island of Nantucket where the bark was found put on shore; and in all probability the people in it came on shore alive, but afterwards were murthered by some wicked Indians of that place, who, for lucre of the spoil in the vessel, which was laden with goods, thus cruelly destroyed the people in it, for which fault some of those Indians was convicted and executed afterwards. Thus perished our hopeful young prophet Joel. He was a good scholar and a pious man as I judge. I knew him well, for he lived and was taught in the same town where I dwell. I observed him for several years after he was grown to years of discretion to be not only a diligent student, but an attentive hearer of God's word; diligently writing the sermons, and frequenting lectures; grave and sober in his conversation."

This youth, whose character and sad fate are thus touchingly drawn out for us, was the son of a distinguished Indian convert, in 1649, at Martha's Vineyard, named Hiacoomes. He with his wife and their sons and daughters all embraced the Christian religion, and seem to have been intelligent and consistent in their course of life. Joel was the oldest son. The father and some of the children were honored and successful teachers among the natives.

Gookin adds: —

"The other, called Caleb, not long after he took his degree of bachelor of art, died of a consumption at Charlestown, where he was placed by Mr. Thomas Danforth, who had inspection over him, under the care of a physician in order to his health, where he wanted not for the best means the country could afford, both of food and physic; but God denied the blessing and put a period to his days."

The writer says that consumption was the fatal scourge of the Indian youths that were bred up to school among the English, and that the disease was very common among the Indians themselves.

"I know," he remarks, "some have apprehended other causes of the mortality of these Indian scholars. Some have attributed it unto the great change upon their bodies in respect of their diet, lodging, apparel, studies; so much different from what they were inured to among their own countrymen."

Still, the amiable and unwearied laborer cannot refrain from uttering, in the spirit of his time and fellowship, this lament: —

"These awful providences of God in frustrating the hopeful expectations concerning the learned Indian youth who were designed to be for teachers unto their countrymen, caused great thoughts of heart unto the well-willers and promoters thereof."

The explanations given at the time for the thwarting and disappointing of so much zeal and toil were various. Some judged that God did not see fit to make use of Indian teachers of the Gospel; others that the Indians had got to wait until after the effectual calling of the Jews; others still, that Satan did not mean to yield up the strong hold which he had in his dominion

over the barbarians. But as is always the case, that those who work in any good cause most heroically and painfully keep the best heart of trust under all discomfitures, so says Gookin: —

"Others, whose faith and hope in God was active and vigorous, did conclude that there was nothing more in these providences and remoras than did usually attend and accompany all good designs, tending to the glory of God and salvation of souls."

The same unrewarded labor for the training of Indian youth has been continued and renewed under varying conditions and circumstances from those days to our own. Zealous and self-denying teachers, with intelligent and discreet methods, have faithfully tried to offset some of the wrongs inflicted upon the aborigines, to atone for the blight visited upon their race by civilization with its curses as well as its blessings, to withstand the doom of extinction which has seemed to threaten them, and to provide for them friends, teachers, and protectors of their own blood, by selecting some of the most promising of them in their early years to be trained for those special services of humanity. Corporations and benevolent agencies have been lavishly furnished with funds for that object. There exists to this day in Boston, in continued vitality, holding semi-annual meetings, a corporation succeeding to the old English one, bearing the title of the "Society for Propagating the Gospel among the Indians and others in destitute Places in North America." The society, with a tolerably munificent endowment, is glad to avail itself of the generalities embraced in the latter portion of its designation, and in the lack of sufficient and promising sharers of its bounty among the Indians, distributes a large portion of its income for missionaries and school-teachers among the fishermen in lonely places on our sea-coasts and islands. There are, indeed, from time to time, a few Indian boys and girls who receive help and guardianship from it in Western seminaries.

The efforts of the equally zealous emissaries and agencies of the Roman Church have not been one whit more successful in this direction than those of Protestants. It might seem as if the methods of that Church, in its freedom from the metaphysical divinity of Calvinism, and its dramatic and scenical appliances

in worship, would have given it a great advantage for winning converts and disciples among the Indians. And there have been indeed several Roman Catholic stations for mission work among the Indians in Canada which have outlasted any similar enterprises among Protestants. But when we carefully strike the balance and weigh results, there is but little matter of boasting left to either Church. It is remarkable that the rival experiments for the collegiate or academic training of Indian youth were undertaken almost contemporaneously at Cambridge and in Quebec and Montreal. We have taken note of the disappointment at Harvard. There happens to be in the hands of the writer of these pages, as he is engaged upon them, the manuscript of the next book of Mr. Francis Parkman in his admirable series of works on the French colonization, discovery, and dominion in North America. He gives the writer liberty to copy, by anticipation, the following sentence. Referring to the preparatory school which Laval, the Vicar Apostolic of Canada, established in 1668, in connection with the great seminary, now the university bearing the founder's name, Mr. Parkman says that it contained eight French and six Indian pupils, and he adds: "But so far as concerned the Indians, it was a failure. Sooner or later they all ran wild in the woods, carrying with them as fruits of their studies a sufficiency of prayers, offices, and chants, learned by rote, along with a feeble smattering of Latin and rhetoric, which they soon dropped by the way."

The laborious and zealous efforts made for the benefit of the Indians in Massachusetts, at a comparative cost far exceeding that which was spent upon the education of the children of the colonists, were thwarted by a train of melancholy circumstances just at the time when the results were most promising. There were some half a dozen Indian villages prosperously established in the colony, under the subordinate magistracy of native officers, with farming, mechanical, and manufacturing enterprises in hopeful progress, and with churches and schools where Indian preachers and teachers were really doing a good work. But the devastating and desolating warfare which King Philip initiated in 1675, and which came so near to a war of extermination for the whites, brought dismay and ruin on the

humane work then in progress. The converted and semi-civilized Indians under the protection of the whites, during the horrors and apprehensions of the time, were suspected of actual or possible treachery. They were mistrusted, watched, scattered, and then removed in large numbers to our harbor islands; and whatever of possible hope the future had offered for their real civilization was crushed and abandoned.

The truth must be written that the experiment in their behalf has been always, and under all circumstances, little other than a mortifying and an absolute failure. There seems to be in the blood and fibre, and in the inherited qualities and impulses, of the red man a tenacious and ineradicable preference, where the alternative of civilization is set fully before him, for his own wild ways in the wild woods. We might as well attempt to rid the deer and the sea-fowl of their game flavor as to neutralize this Indian instinct. Our historical records and our present observation fully certify this fact, that a far larger number of whites, French and English, men, women, and children, have on this continent adopted the life and habits of the Indians, by preference, when they have had the opportunity of doing so, than the whole count of converts to European civilization which have ever been drawn from the aboriginal stock.

It seems difficult to ascertain the precise date of the erection of the edifice on the College grounds for the especial use of Indian scholars. Perhaps there was one earlier than the brick building. In 1653 the Commissioners of the United Colonies instructed the members of their body from Massachusetts "to consider and order the building of on Intyre Rome att the College for the conveniencye of six hopfull Indians youthes to bee trained up there according to the advice received this year from the Corporation in England: which Rome may bee two storyes high and built plaine but strong and durable the charge not to exceed £120 besides glasses which may bee allowed out of the parcel the Corporation [in England] hath lately sent over upon the Indian account." In 1654 the Commissioners in a letter to the English Corporation refer to "the building in hand for some Indian Scollers at the Colledge whereof wee wrote the last yeare," and they ask "that allowance may bee

made for Interpretors Scoolmasters and others to Instructe the Tractable Indians." It was afterwards, in the same year, 1654, left to the Commissioners of Massachusetts "to give order for the finishing of the building att the Colledge and to alter the forme agreed upon att the last meeting at Boston, as is desired by the President of the Colledge provided it exceed not thirty foot in length and twenty in breadth," &c. In 1656 President Chauncy had petitioned the Commissioners for liberty "to make use of the Indian Buildings," and it was agreed in answer that he might, with the advice of the Massachusetts Commissioners and Mr. Eliot, "for one year next ensuing Improve the said building to accomodate some English Students provided the said building bee by the Corporation [of the College] secured from any dammage that may befall the same through the use thereof."

Thomas Stanton had been for many years a famous interpreter for the English in their intercourse with the Indians; and as his two sons gave promise of being of the same good service, the Commissioners provided for their maintenance during their education at Cambridge, that they might be trained for tutors there to Indian pupils; direction was given that they should be received in the College building or in some private house till the Indian College was finished. One of these boys, Thomas, does not appear to have availed himself of the privilege. The other, John, entered the College, and we can follow him through a part of his course by the accounts of disbursements for him. But he did not reach a degree. Indeed he seems to have been more Indian than English in his ways, and was found to to be a most irregular and untoward "schollar." His negligence and misdemeanors were made the subject of grave discussion among his patrons, the Commissioners. At their meeting in September, 1659, they were informed in a letter from the President of the College that this youth on whom they had expended "a considerable sum," in hope of his future service, "doth greatly neglect his Studdy and hath Comitted many other misdemeanors." So they addressed him over all their signatures an admonition, beginning as follows: "John Stanton we have received information from Mr. Chauncye of youer Intollarable negligence in youer studdyes and of severall

miscarriages which may not bee bourne. It cannot but bee grievous to reap such fruites of all the cost bestowed, when wee justly have expected a more hopefull harvest," &c. They appeal to him earnestly and sternly to change his course, avowing that only the entreaties of his father induce them to give him a further trial, which they do, under solemn warnings.

We have allowed ourselves to dwell at some length upon this incidental element in our theme, because of our own conviction that the early aims and labors of the founders of Harvard College had a special regard to the civilization and education of the natives, and that this fact has failed of due notice and emphasis in the retrospective references to the history of the institution. The infant seminary opened the doors of its preparatory schools and its own hall on equal and impartial terms to white and red skinned pupils. Many of its earliest graduates found more use for the Indian tongue than for their Latin and Greek. The most substantial and costly building on the College field bore the title of the Indian College. When the twenty native students for whom it was designed for study and lodging-rooms could not be obtained, it was used mainly for printing tracts, primers, catechisms, grammars, and the Bible in the Indian tongue. When it became necessary to remove the building, its original use was still kept in remembrance. The Corporation had voted in November, 1693, that it should be taken down, that another building might be set up. The Commissioners of the society at whose charge it had been erected, at a meeting in Boston in 1695, voted to give the materials of the building towards the construction of another, "provided that if any Indians should afterwards be sent to the College they should have chambers in it free of rent." Judge Sewall makes this record in his Journal for 1698: "In the beginning of this moneth of May, the old Brick Colledge, commonly called the Indian College, is pulled down to the ground, being sold to Mr. Willis, the builder of Mr. Stoughton's Colledge." The Judge was both a member of the Corporation of the College and a Commissioner of the society for converting and civilizing the Indians. His Journal bears abundant evidence that both of these objects of his deepest interest shared equally in his regard. Myths are apt to gather about all historical facts,

and they generally have some element of verisimilitude in them. Therefore, it may be allowable here to repeat what some romancer told old Josselyn; causing him to write in his account of his second voyage to Boston, in 1663, *that he was told* "that there was but two Fellowes in Harvard College, and one of them was an Indian."

As we shall have to notice further on, in following Mr. Sibley's pages, money, actual coin, was a very scarce article about the College in its early days, as indicated by the extraordinary barter business of the steward in arranging his accounts with the students and their parents. And real money then went a great way. We should probably, therefore, not greatly err if we conclude that the treasury of the honored corporation in England in behalf of the Indians was made directly and indirectly one of the chief sources of supply for the necessities of the College, and in helping towards the support of its primitive Faculty. The learned scholars, hard worked and living most frugally, in all their generations, as members of that society, have always welcomed any subsidiary aid for their shallow and light purses; and many of them have happily found trifling supplies of the sort, as authors, preachers, lecturers, or private teachers.

We have also incidentally brought before us a most forcible reminder of the precious hopes and the transcendent interests intrusted to the College for fulfilment and guardianship, in the anxiety which was felt from its very foundation that the Colony, which in its own straits and poverty had founded the seminary, should have a secure hold upon the life-service of those who might be trained in it. Ministers for the churches "when their present ministers should lie in the dust," was of course the paramount object, provision for which was had in view. But neither the expectations of the founders nor the training in the College had sole or exclusive reference to this object. From the first it was more and other than a theological seminary. Masters for grammar-schools, in which in turn new pupils should be prepared for the College, physicians and accomplished magistrates, who, without being professional lawyers,— a class of persons the fathers of Massachusetts did not wish or intend to have among them,— might still be skilled in the

forms of legislation and administration, were expected to constitute a fair proportion of the graduates. It was therefore understood that those graduates should remain in the Colony, or at least in some of the sister Colonies, and repay by their life-work and grateful sentiments the care which had provided for them the best academic training of the age even in the Old World. Indeed there was something more than an expectation to this effect, for an effort was made to enforce an implied covenant binding the gratitude and honor of the first alumni.

The Commissioners of the United Colonies, meeting at New Haven in September, 1646, in the third year of their combination, took care as to this implied covenant. They had previously, in 1644, in answer to a petition presented to them from Mr. Shepard, the minister of Cambridge, authorized an appeal for aid for the College from all the families of the confederated Colonies, even if it should be but a peck of corn from each. But now they passed the following "conclusion": —

"Whereas the Colonies at present affoorde some help towards the maintenance of some poore schollers in the Colledge at Cambridge in the Massachusetts. It was propounded and thought fitt that some course be taken with the parents and with such schollers themselves (as the case may require) that when they are furnished with learning, in some competent measure, they remove not into other Countries, but improve their present abillities for the service of the Colonies, and for this purpose the Commissioners for the Massachusetts were desired to advise with the generall Courte and Elders there for the orderinge such a course, and how such schollars may be imployed and incouraged, when they leave the Colledge either in New Plantations, or as Schoole masters, or in ships, till they be called and fitted for other service."

The first President, Dunster, addressed a petition for advice and instructions to the Commissioners in 1647, and among other questions he asked whether scholars that have had help from the College, through the benefactions of the Colonies, "shall accounte themselves soe ingaged to stay in the Country, as that they may not goe away without offence, and if soe, then what way they may disingage themselves."

To this question the Commissioners reply as follows —

"It is apprehended by the Commissioners that those who have benefitt by the contributions of the Collonies should be engaged to attend the

service of the Country upon tender of imployment and maintenance sutable to their condition and the state of the Country; but such tender being made, in case they do not acquiesce in what is presented, but for greater outward advantage or other respect chuse to depart, they should be engaged in convenient time to repay what they have received from the Colonies."

It does not appear that in any case a literal compliance with this condition was ever exacted of a graduate on his leaving the country. Some who went away, as far as anything is known to the contrary, seem to have been unmindful of their obligations to the College. But others remembered them, and gratefully did it service from their new homes in Europe or in the West Indies.

In a Declaration made by the General Court of Massachusetts in 1652, in behalf of the interests of the College, it is bluntly affirmed that "this Court find by manifest experience, that though the number of schollers at our colledge doth increase, yet as soone as they are growne upp, ready for publicke use, they leave the country, and seek for and accept of imployment elsewhere, so that if timely provision be not made it will tend much to the disparagement, if not to the ruin, of this commonwealth."

This melancholy utterance was made just ten years after the first class had graduated from the College. That short period had, however, been long enough to furnish what the troubled legislators called "experience" of a disappointment which greatly saddened them. They had indeed had reason for such feeling. The College had already sent forth more graduates than could find profitable or congenial employment here. But this is not the whole of the facts in the case. The circumstances of the time presented attractions and a field of activity abroad for many of those young and well-furnished scholars. And, indeed, the College had unwittingly been training its pupils for service in the mother-country, where influences and principles in accord with those of this wilderness Commonwealth had then a temporary sway.

One of the most pathetic and interesting passages in the "History of New England," by its noble governor, Winthrop, relates to the state of affairs at the time in England as bearing

upon the fortunes of the struggling Colony here. The sentences were evidently written under a deep depression of spirits, giving to the writer an eloquence of tender earnestness, and drawing out, in his own fixed resolutions of constancy to the undertaking to which he had consecrated himself, the assurance of his own elevated character. He had embarked his whole estate, and impoverished himself, in the great enterprise of exile. He had shared in and triumphed over the risks and perils of its early stages. He had stoutly held his courage and faith through the horrors of Indian warfare, the distractions of religious dissension, the jealousies attending the settling of a form of civil government which combined a curious mixture of the principles of a theocratic, an aristocratic, and a democratic system, and he had successfully so far used all his ingenuity, barely stopping short of artifice and subtlety, in thwarting the scheme of Laud's Commissioners to wrest the patent or charter of the Colony from its keeping.

But now he was compelled to face the possibility that so many of his associates, including some of the most capable and influential of them, were about abandoning the enterprise as to threaten its utter failure through their inconstancy. The following bears date in his Journal, June, 1641: —

"The Parliament of England setting upon a general reformation both of Church and State, the Earl of Strafford being beheaded, and the archbishop (our great enemy), and many others of the great officers and judges, bishops and others, imprisoned and called to account, this caused all men to stay in England in expectation of a new world, so as few coming to us, all foreign commodities grew scarce, and our own of no price. Corn would buy nothing. A cow which cost last year £20, might now be bought for £4 or £5, etc., and many gone out of the country, so as no man could pay his debts, nor the merchants make return into England for their commodities, which occasioned many there to speak evil of us."

The simple truth was, that the ideas and methods of administration alike for Church and State, under which these New England Colonies had been planted and had thriven, were asserting their right to attempt an experimental trial on the broad field of the old realm. Some of our sturdier and more ambitious exiles and their sons wished to take a part in the

fracas, and such Englishmen as had been purposing to find an indulgence of their republican principles here, concluded to stay at home to attempt an establishment of them there. Even our own General Court thought it advisable to send over three of our own men of mark as agents to the Parliament, and "to give advice for the settling the right form of church discipline there." The governor's eldest son accompanied them, and forty others, who, not having any commission, nor any errand but that of the prompting of their own interest in the excitements of a political convulsion, are to be looked upon as simply deserters.

The devout governor refers to the same subject again in his Journal, in September, 1642. The depression in the Colony and the exodus from it still continued. Among those who returned to England, he takes especial note of "a magistrate, four ministers, and a schoolmaster, who would needs go against all advice." The governor, evidently with satisfaction, records the special providences, both by sea and land, which visited with protracted perils of shipwreck and starvation these uneasy wanderers. "Three of the ministers, with the schoolmaster, spake reproachfully of the people and of the country" which they had deserted. Winthrop thinks the party was saved from destruction by the prayers of the fourth minister, who, as an exception, "spake well of the people of the country." The writer follows the fortunes of other deserters to various places, to show how Divine judgments pursued them. He says there was "much disputation about liberty of removing for outward advantages, and all ways were sought for an open door to get out at; but it is to be feared many crept out at a broken wall."

It is immediately after these dismal relations of facts which seemed to threaten the continuance of the occupancy of this soil by white men, closed with a touching outburst of the governor's own spirit of loyal fidelity, that he takes note of the first Commencement at Harvard, October 9, 1642: "Nine bachelors commenced at Cambridge; they were young men of good hope, and performed their acts so as gave good proof of their proficiency in the tongues and arts."

But of these nine "bachelors," the first fruits of the College,

seven, as we shall see, left the country for better fortunes or more rewarding work abroad. Again, in 1645, the governor writes: "The scarcity of good ministers in England, and want of employment for our new graduates here, occasioned some of them to look abroad." Among these was Winthrop's nephew, the famous, but not honorable, George Downing. Of him we read: "He went in a ship to the West Indies to instruct the seamen. He went by Newfoundland, and so to Christophers and Barbados and Nevis, and being requested to preach in all these places, he gave such content, as he had large offers made to stay with them. But he continued in the ship to England, and being a very able scholar, and of a ready wit and fluent utterance, he was soon taken notice of, and called to be a preacher in Sir Thomas Fairfax his army, to Colonel Okye his regiment." The governor happily was spared, by his death, the knowledge of the subsequent career of his kinsman, conspicuous for high successes and worldly gains, but recreant to virtue and all nobleness.

The propitious occurrence of the first Commencement at Harvard was turned to good use by some friends of the Colony in Old England, with the help of those who went from here thither, immediately after it took place. This was the occasion of the publication in London of one of the most valuable of the little tracts relating to our early history. The title is "New England's First Fruits in Respect to the Progress of Learning in the Colledge at Cambridge, in Massachusetts Bay, &c.; published in London, in the Year 1643, by the instant Request of sundry Friends," &c. The beautiful proem to this precious tract cannot be too often quoted: "After God had carried us safe to New England, and wee had builded our houses, provided necessaries for our livelihood, reared convenient places for God's worship, and settled the civill government: one of the next things we longed for and looked after was to advance learning and perpetuate it to posterity, dreading to leave an illiterate ministry to the churches, when our present ministers shall lie in the dust." It would appear from this tract that though the General Court had, in 1636, purposed to found the College, and had voted £400, a sum equal to one year's rate for all the public expenses, for that object, the undertaking was not really

initiated till the death of John Harvard, two years afterwards. His munificent bequest was one half his estate, and his whole library. His estate in this tract is put at £1,700. "After him another gave £300, others after them cast in more, and the public hand of the State added the rest." Here was a bold use of the word *State*. It would seem unwarranted to question so positive an assertion in this tract, but if any other person gave £300 before the year 1643, we are ignorant of his name. The one building for the College is thus described: "The edifice is very faire and comely within and without, having in it a spacious hall: where they daily meet at Commons, Lectures and Exercises; and a large library with some books to it, the gifts of diverse of our friends, their chambers and studies also fitted for, and possessed by the students, and all other roomes of office necessary and convenient, with all needful offices thereto belonging." This must have been a very wonderful building: its ground plan, elevation, and internal disposing would be exceedingly interesting, if they had survived only on paper. The famous Captain Edward Johnson, author of "The Wonder Working Providence of Zion's Saviour in N. England," writing in 1651, is even more tantalizing in his description of this marvellous edifice. He says: "The building, thought by some to be too gorgeous for a wilderness, and yet too mean in others apprehensions for a Colledg, is at present inlarging by purchase of the neighbour houses, it hath the conveniences of a fair Hall, comfortable studies and a good Library."

We know, however, that this edifice became prematurely ruinous, leaky, and insufficient. President Dunster addressed both the General Court and the Commissioners of the United Colonies on this subject. Writing to the latter body, in 1647, he says: "Seing from the first euill contrivall of the Colledg buildinge there now ensues yearely decayes of the rooff, walls and foundation, &c." Recourse was had to temporary repairs. The Commissioners, in a letter to the corporation in England, in 1672, after bewailing "our bereavement by death of many aged and worthy Leaders in Church and Commonwealth that layed the foundation of these plantations," and the loss of the late President of the College, refer to their "discurragement

alsoe by the decay of theire buildings which were made in our Infancye, yett are now in a hopefull way to be againe supplyed with an able Presedent, and also with a New building of bricke and stone" &c. This promised building was completed in 1677.

It would be an effort, in some part, of the imagination to present to ourselves the College yard under its first occupancy with one or more buildings. The site of the College has now become as convenient for its use as any other spot in the neighborhood of Boston would be, but it has been made thus convenient because of its occupancy for its purpose. At the first it must have been very inconvenient, and we are at a loss to find the reasons for its selection. It being understood that Boston was to be the metropolis, the site of the College certainly was not readily accessible from it. A river, more than double its present width, with reedy and sedgy shores, and great expanses of muddy flats, divided Cambridge from the peninsula. The ferry at Charlestown offered, in propitious weather, the readiest means of communication, though even that required a long detour for a hard road. Little skiffs — anticipating the sculls and shells of the present boat-clubs — plied vigorously for the transport of passengers on the Charles, and cattle and goods were moved on rafts. The causeways through both of what are now known as Cambridgeport and East Cambridge were treacherous and dangerous. As recently as 1729, Governor Burnet, while driving from Cambridge to Boston, over one of them, was overturned and thrown into the water, and died from the effects of it. The drive to Cambridge, over the Boston "Neck," through Roxbury, was long and circuitous, and even then the Charles was to be crossed, though at a narrower point. For a few weeks, in the coldest winters, there was a bridge of ice available for the venturesome. Provision was made for the keeping of a horse at Charlestown, for the President of the College.

Edward Johnson, before quoted, says that the settlement in Cambridge was surrounded by a pale "a mile and a half long, palisadoes of small trees driven into the ground and united by birch withes." This was for security against the Indians, and for the protection of cattle. The College plot was, of course,

included, which, besides the dwellings clustering on it and around it, was planted as an orchard. There was a slight elevation, called Watch Hill, near the site of the present Dane Hall, and on this stood the second, third, and fourth of the buildings successively erected for the place of worship for the inhabitants and the students. Another elevation in the present College yard, the site of Boylston Hall, was very early occupied by the parsonage.

Another edifice which won early fame, because of the excellence of the man, Elijah Corlet, who for more than forty years presided in it, may have been built on these grounds even before the first College hall. It is thus referred to in the tract published in London, in 1643, "N. England's First Fruits": "And by the side of the Colledge a faire Grammar Schoole for the training up of young schollars, and fitting of them for Academical learning, that still as they are judged ripe, they may be received into the Colledge of this schoole. Master Corlet is the Mr. who hath very well approved himself for his abilities, dexterity and painfulness in teaching and education of the youths under him." This "Grammar Schoole" represented what we now call a high school. It would seem, also, that even earlier than this a building, or a room in a building, had been provided for elementary instruction; a "Dame's School," for beginners in the humanities.

The first class of graduates had been under a training which is thus described: "Over the Colledge is Master Dunster placed as President, a learned, conscionable and industrious man, who hath so trained up his pupils in the tongues and arts, and so seasoned them with the principles of divinity and christianity, that we have to our great comfort (and in truth) beyond our hopes, beheld their progress in learning and godlinesse also." When we consider the difficulties under which the Greek, Latin, and Hebrew languages were studied at that time, the deficiencies in the apparatus of learning, and the perplexities of the "Grammaticall, Logicall, and Rhetoricall" exercises, and the proficiency which was none the less rigidly exacted in them from the young candidates for a bachelor's degree, we may be justified in saying that the majority of the members of each graduating class, in our own time, would have found their

match in maintaining a "Thesis" or "Disputation" with the first nine of their predecessors.

The governor and "divers of the ministers" sent over the account of the first Commencement, in 1642, which is published in the little tract now referred to. It was a proud and a hopeful day when "the Governour, Magistrates and the Ministers from all parts, with all sorts of schollars, and others in great numbers were present, and did heare the exercises, which were Latine and Greeke Orations and Declamations, and Hebrew Analasis — and disputations in Logicall, Ethicall, Physicall, and Metaphysicall questions." The exercises were on a par with those of the English and Continental universities of the time, and many of the spectators and auditors had but lately passed through the same ordeal in them. It was doubtless a brave and exhilarating scene, rustic and rude in most of its accompaniments, amid the stumps of the recent forests, and with groups of half-clad natives looking on. The governor tells us that most of the guests present "dined at the college with the scholars' ordinary commons, which was done of purpose for the Students' encouragement, &c., and it gave good content to all." The banquet on this occasion, we may safely say, was relatively not inferior in material or array to some of the later ones there provided.

The readers of the volume now in our hands have for the first time the privilege and the opportunity of informing themselves as to the circumstances under which the earliest students were educated, their personal history and fortunes, the return which they made in the various forms of service to the best interests of the rising State, as they led off the long line of the alumni. The perusal of this book will sensibly add to the enjoyment which every graduate will henceforward derive from visiting the old grounds and halls.

Mr. Sibley furnishes us many particulars of interest regarding the character and devoted work of the first President, Dunster, as references are made to him in the memoirs of the graduates trained under him. He initiated and organized the method of study and discipline for the first years of the institution, and this so thoroughly and so acceptably to the views of its guardians, that this method appears to have been con-

tinued, with but few modifications, for a considerable period of years. That those who confided in him, and greatly honored him for his character and work, should have found it necessary to remove him from his place, was lamentable, but only natural and consistent. He was put into that place because his religious belief was in accord with that of the founders and guardians of the College, and thus fitted him to train up the young committed to him in the opinions and convictions identified with the government in Church and State. He changed his belief on a point then considered of fundamental and most vital importance. He, as well as his able successor, President Chauncy, was an accomplished scholar, after the pattern of those days. They would have been recognized at Cambridge or Oxford as equal in gifts and acquisitions to holding the headship of any college in either university.

Leonard Hoar, the third President, of the class of 1650, and the first of its graduates who was placed at the head of the College, though he left his office in less than three years, was a man of remarkable qualities. He married a daughter of John Lisle, a regicide, a distinguished lawyer, made by Cromwell a Commissioner of the Great Seal; and, afterwards, when he fled to Lausanne, assassinated by some Irish ruffians.

Hoar's wife's mother, the widow Alicia Lisle, was arraigned before the notorious Judge Jeffrey, on a charge of high treason, for humanely receiving into her house a lawyer and a clergyman suspected of complicity in Monmouth's insurrection. This feeble and exhausted old lady was beheaded in 1685.

Mr. Sibley copies a letter written from Cambridge, in 1672, by President Hoar to Robert Boyle, in London, which contains a very striking passage: "It hath pleased even all to assign the college for my Sparta. I desire I may adorn it; and thereby encourage the country in its utmost throes for its resuscitation from its ruins. And we still hope some helpers from our native land. A large well-sheltered garden and orchard for students addicted to planting; an ergasterium for mechanic fancies; and a laboratory chemical for those philosophers, that by their senses would culture their understandings, are in our design, for the students to spend their times of recreation in them; for readings or notions only are but husky provender."

Here certainly was a noble and comprehensive forethought, as to the various departments of knowledge, investigation, and occupation, in which this generous toiler in the day of small things would have the College expand. Botanic Garden, Scientific School, laboratories, gymnasium, have come in their time; but the vision of what was possible and desirable to the old seer into the future is not yet quite fulfilled in all its terms.

The method which Mr. Sibley has pursued in tracing the biographies of the graduates is so thorough, not to say exhaustive, as to be instructive and attractive. He makes us feel a warm personal interest in his subjects, and brings us into a personal acquaintance with them. Of course the graduates of the first classes were brought here in their childhood or youth by their parents, and might still regard Old England as their home. The careful readers of our history are able to trace a very marked difference in character, disposition, breadth of view, and extent of culture between the first colonists and the first generation of their children born on this soil. There was something liberalizing and expanding in the influences and memories clinging to those who had come from the green fields, the old collegiate halls, the cathedrals, and ivy-clad churches of the mother country, and who had shared in the games and festivities and household joys of youth there. The children first born on this soil were trained under a hard and rough discipline. There was a gloom in the wilderness which had its effect on their spirits. A rigid and austere form of piety, a harsh domestic oversight, a weary round of religious observances, encompassed their childhood. Their diet, their lodgings, their apparel, were coarse and comfortless. Yet there was much in their experiences, in the sacrifices which they had to make, in the efforts required of them, in the frugality of their habits, in the arduous toil of travelling from one place to another by Indian paths and the crossing of unbridged streams, that tended to develop manliness, vigor, self-dependence, and self-reliance. Each of the new and frontier settlements planted in the interior, where a river valley made labor easier and better rewarded it, looked to the College to furnish it with a man of intelligence and piety and practical wisdom, to be both its minister and its physician. Of the ninety-eight graduates

commemorated by Mr. Sibley, fifty-seven, at least, were ordained as ministers, besides those who preached; and many of these, like Michael Wigglesworth, the divine of Malden, and the Poet Laureate of the Puritan colony, practised physic to the acceptance, if not to the benefit, of the patients of those days.

Mr. Sibley's method is to give from the catalogue the names of the members of each class, with the subject of the thesis, whenever it is to be ascertained, on which each spoke when taking his bachelor's degree. He then traces the parentage, and, as far as possible, the circumstances of the early life of each, his course in College, and his studies there. The coming to light of some of the old account-books of the stewards and bursars makes amusing and piquant revelations of the ways and means for meeting the expenses of residence. Only the aristocrats of the time, and not by any means all of these, discharged their College dues in anything that could be called money. The steward must have had an extraordinary office, bureau, barn, slaughter-house, tannery, place of barter, or whatever it was, for exchanging and making available the commodities brought to him. President Rogers, when a student, appears to have driven a cow to this *omnium gatherum* of the steward; for he is charged with "pastor for his cow, befor hir apprisall." President Oakes, when a student, in 1653, is credited with "a calfe; a sheepe, beaffe, wheatte, Indian, malt, suger, lambs, &c." Some of the students received credits for "waytinge in the hall," and for "servic in the buttery." One paid partly "in peasse," and partly by furnishing "summeringe and winteringe of 8 sheepe." Indian corn was very soon established as a legal tender for currency, as well as "Peage," or "Wampum."

When Mr. Sibley has thus followed each of the graduates in his class through his College course, he traces out his subsequent career in life. This, we need hardly say, has been a laborious work, and has tasked the skill, the resources, the patience, and the practised acumen of this most diligent of the antiquarians among us. Of the classes of 1642–1658, included in this first volume of biographies, we must leave out the years 1644 and 1648, which furnished not a single graduate. The years 1652 and 1654 furnished only one each. About half of

the first ninety-eight graduates left the country, the majority of the earlier classes going abroad, the majority of the later ones remaining here. Of those who remained here the larger number became ministers of the Congregational churches in this and the other New England Colonies. These, too, were for the most part the writers and authors whose works, after the manner of Anthony à Wood, Mr. Sibley charges himself with the duty of presenting accurately by title and subject. We should add, however, that very many, also, of those who left the country were authors and writers abroad, some of them of works of importance at the time. These, of course, have due attention from Mr. Sibley. Of such of his subjects as remained to do their life-work here, especially as parish ministers, it was comparatively easy to construct a memoir. This work had been more or less performed for them at the time of the decease of each of them, though these early sketches admitted of or required supplementing. Parish records, gravestones, family Bibles, old letters, and all the other resources of the antiquarian have been drawn upon by Mr. Sibley. Indeed, he has contrived indirectly to present us, in the thoroughness of his method, with no inconsiderable portions of parish history, and with the details of the ecclesiastical and political systems of the Colonies. The usual proportion of the eccentric, the unsuccessful, the quarrelsome, and the unfortunate appear before us, with an occasional tragic story of a life. In the memoir of John Russell, the minister of Hadley, of the class of 1645, we have an interesting reference to the sheltering there of two of the members of the High Court of Justice which condemned Charles I., and an authentic account of the incident so romantically, but still with substantial fidelity, described in Scott's "Peveril of the Peak," and in Cooper's "Wish-ton-wish." In the memoir of Joseph Rowlandson, of the class of 1652, the minister of Lancaster, we have a thrilling relation of the Indian massacre in that town. The full and admirable sketch of the life and writings of Sir George Downing presents us with an account of an extraordinary career, however darkened and stained by hypocrisy, duplicity, and ingratitude. The memoir of George Stirk, of the class of 1646, who became a famous physician in London, doing efficient service in the time of the great plague,

to which he became a victim, and the account of his astrological and chemical writings, will absorb the attention of the reader. The account of Increase Mather, the most famous of the ministers in his generation, President of the College, and agent of the Colony at its most critical period at the British Court, — a serviceable and faithful man, who received hard measure in his own time, and has received the same since, — does infinite credit to Mr. Sibley for its fulness, its discrimination, and its impartiality. This one draught would of itself prove the superior fitness of the author for his task.

When Mr. Sibley comes to deal with the matter of his second volume, he will have to present to us the details of the most harrowing episode in the history of Massachusetts, connected with the witchcraft delusion. Of this the most conspicuous victim was the Rev. George Burroughs, of the class of 1670, an upright, faithful, and inoffensive man, a "muscular Christian." His great physical strength was regarded as evidence of complicity with the Devil, and he was executed at Salem in 1692. Only one other graduate of Harvard, in all its history, has suffered the extreme penalty of law. He was, also, one of its professors.

Some few of the subjects of Mr. Sibley's pages appear only in name, as either here or abroad having had but a short or obscure life, and even an unrecorded date in death. But by far the larger portion, both here and abroad, were conspicuous and honored men, doing work worthy of record, filling quiet and modest, though laborious places of usefulness, serving their own generations, and sometimes those that followed them, fitted to do the work which their times and their associates needed should be done, and meeting the severe conditions of their lot with cheerfulness.

As to the publications from the pen of many of these old worthies, which Mr. Sibley has chronicled with such care and fidelity, perhaps only those which have an historical value are remembered or consulted in our days. They stand in a fair comparative average with the works of English, Scotch, and Dutch writers of the time. They certainly are on a level in scholarship and other qualities with most of the tracts and treatises whose titles were disposed after the names of their

authors, by Anthony à Wood. Bating a few noble works written for all time, the literature of those days has but scant claims on posterity. The library of the College, burned in 1764, of which we have no complete catalogue, contained the gatherings from its earlier and later friends. But one volume, from the library of John Harvard, which furnished its nucleus, was saved from the catastrophe. Doubtless its earliest books, given from the scanty stores of the exiles, were regarded as treasures, but they would be but very dry and husky mental fodder now. When Edward Everett was President of Harvard, he furnished from its archives, to Hon. Robert C. Winthrop, a list of the titles of the thirty-nine volumes given to the College by the first governor, his ancestor. In a note, accompanying the list, Mr. Everett writes: "With a few exceptions, I think I may congratulate you that your honored ancestor did not transmit them to you."

In a previous page we have taken note of the anxiety manifested by the founders and early benefactors of the College to secure to the Colony the benefits of the presence and service here, in Church and State, of its first graduates; and mention has been made of the attractions by which many of them were drawn to England in the turmoils of its political and religious convulsions. Of the class of 1642, seven of the nine alumni went, and, with one exception, remained abroad. Three of the four graduates of 1643 did the same. There were no graduates in 1644. Three of the seven graduates of 1645 left the country, as did two of the four which constituted the class of 1646. Six of the seven graduates of 1647 went abroad. The proportion from that date was generally less of those who sought to better their condition, or to exert a wider influence, by leaving New England, till we come to the classes of 1657 and 1658, each of which furnished seven graduates, all of whom remained on this side of the ocean. After that day, when the emigration to these Colonies commenced anew, a few of our stragglers returned, finding their livelihood, if not their necks, safer here than in England, when the old order, in Church and State, was to be revived.

A slight reference, from the materials gathered by Mr. Sibley, to the career of the first class of graduates, may close these

pages. The arrangement by which, down to our Revolutionary War, the names of the graduates were disposed on the catalogue, not in alphabetical order, but according to the social standing of those who bore them, puts Benjamin Woodbridge at the head of the long line. Cotton Mather calls him "the Leader of this whole Company: a Star of the first Magnitude in his Constellation." Calamy speaks of him as "a great Man every way: the first Graduate of the College: the lasting Glory as well as the first Fruits of that Academy." He was of honored parentage on both sides, and had been a commoner of Magdalen Hall, Oxford, before coming hither. He returned to Oxford, where he took a master's degree, in 1648. He was an author, and a learned and laborious preacher in high public stations; when, on being silenced as a non-conformist, he served in private till his death, after nearly forty years' work. He preached before King Charles II. once, as one of his Chaplains in Ordinary. Of Sir George Downing, the second on the list, an historic character, Mr. Sibley, as before remarked, furnishes an elaborate sketch. Though a man of unquestioned ability, and of some high qualities of statesmanship, he appears to have been wholly lacking in moral principle. His mother, a sister of Governor Winthrop, and herself a gentle and noble woman, did not spare her own sentence of judgment on the character of her son. He first appears in England as a preacher in Fairfax's army, then as a confidential member of Cromwell's staff. He was next sent on diplomatic missions to France and the Duke of Savoy, and finally as Minister to Holland, receiving his credentials from the pen of Milton, in which capacity he did great service as a negotiator and writer on the navigation laws. An observer of his course wrote to Clarendon that he was "as arrant a rascal as lives among men." Pepys calls him "a stingy fellow." He cunningly contrived to retain his ambassadorship under Charles II., and, at intervals, was in Parliament. As "a perfidious rogue" he procured the arrest and ruin of some of his old regicide patrons. He was enriched by a matrimonial union with the Howard family. Downing College, Cambridge, was founded from his wealth.

John Bulkley, who probably went to England with his classmate, Downing, served as a preacher, when, on being silenced, he became a physician.

William Hubbard, one of the two who remained in Massachusetts after graduating, wrote the History of New England.

Samuel Bellingham, son of one of the governors of Massachusetts, went to Europe, took the degree of Doctor of Medicine at Leyden, and then practised physic in London.

Henry Saltonstall, son of Sir Richard, took a medical degree at Padua, in 1649, and became a Fellow of New College, Oxford.

John Wilson remained here, serving more than forty years in the ministry.

Tobias Barnard went to England, and there we lose him.

Nathaniel Brewster, after serving as minister at Norfolk, England, and then under the Lord Deputy, in Ireland, where he received a degree at Dublin, returned here after the Restoration.

Samuel Mather, one of the four graduates of 1643, became Chaplain to the Lord Mayor of London, and preacher at Magdalen College, Oxford. He was Master of Arts, at Oxford, Cambridge, and Dublin, was one of Oliver's Commissioners to Scotland, and went to Ireland with Deputy Henry Cromwell. John Allin, of the same class, became Vicar of Rye, in Sussex, then a physician in London, serving during the Plague. He was a famous astrologer, and it would appear that, after a strangely varied career, he recrossed the ocean, and was a preacher in New Jersey.

So we might cull from Mr. Sibley's pages very many sketches of the lives and fortunes, some of them of romantic or thrilling interest, of men who, as youths, received their academic training in the primitive halls of Harvard, while as yet the "howling wilderness" environed the now historic grounds. The author is sure of receiving, for all coming time, the grateful appreciation of the sons of Harvard for what he has done, while the living will unite in the hope that he will yet pursue his work.

A stanza from Dr. Gilman's exquisite Ode, "Fair Harvard," written for its Second Centennial, rings in our remembrance:

> "O Relic and Type of our ancestors' worth,
> That has long kept their memory warm!
> First flower of their wilderness! star of their night,
> Calm rising through change and through storm!"

GEORGE E. ELLIS.

Art. VI. — The Session.

The first topic to which the mind naturally reverts, in connection with the recent session, is the Crédit Mobilier investigation, and the nature and extent of the corruption it has brought to light. The most important question suggested by this topic is whether the interest thus excited will result in any serious attempt to reform our politics, or purify the management of our great moneyed corporations. Our answer to this question will depend, not on the intensity of the public indignation against the real or suspected offenders of the past, but on the wisdom and efficiency of the measures the public shall take against a recurrence of like abuses in the future. In conducting a campaign against strongly entrenched abuses, as in the military field, it is necessary to proceed in a regular and systematic manner, to beware of having the attention diverted by false attacks, and carefully to avoid engagements with our own forces. We do not hesitate to say that if the just indignation excited by the operations of the Crédit Mobilier is to be entirely expended upon the members of Congress known or suspected to be interested in that scheme, more harm than good will be done. If we wish to seek for that state of things which has made possible, not only the Crédit Mobilier, but all the other schemes which have brought American financial management into such deserved disrepute, we must look much deeper than the reports of investigating committees can carry us. The root of the evil is to be found in the vast accumulation of wealth during the past half-century, unaccompanied by any corresponding increase in the diffusion among the public of political and financial knowledge. Every citizen is now more or less dependent upon a multitude of joint-stock companies whose organization is complex to a degree never thought of in times past. The old line of stages with a single owner is replaced by the modern railroad, with its paid-up stock, its purely nominal par value, its watered stock, its preferred stock, its stock dividends, its bonds payable in gold, its bonds payable no one knows how, its mortgages, its leases, and every other device which ingenu-

ity can suggest to prevent the public from understanding its financial condition. Against this we have no corresponding increase of financial knowledge to serve as a set-off. The average citizen of to-day knows little more of political economy and nothing more of practical finance than did his ancestors of the last century. Indeed, when we say that we no longer punish or denounce men for making the most profitable use they can of their labor and wealth, saving when they loan their money at exorbitant interest, we chronicle the only decided step in advance which we can claim to have taken. The general result is that a large portion of our national and individual wealth, and a portion in the management of which the poorest citizen has a deep interest, is in the hands of corporations of which the organization and operation are, to the masses, as great a mystery as Newton's Principia. To this state of things neither the law nor the political economy of the past are applicable, except in and through their most general and abstract principles. In the case of law we may hope to find these principles intelligently applied to suit the exigencies of the new state of things, because men are expected to make a profound study of them before entering upon the practice of the profession. But the abstract principles of political economy are held in contempt by the masses both of our citizens and statesmen, if one can properly be said to contemn a thing of which he has no correct conception, and which he would respect if he only knew what it was. The result is, that the students of political economy and finance are few in number, insignificant in direct influence, and not to be found among practical financiers.

This state of things has given rise to a powerful class of agents, managers, and operators of a multitude of kinds, whose business it is, in the majority of cases, to turn the public ignorance to the best account. They are the financial quack doctors of the body politic. In their hands the public is an Argan, tormented with a multitude of imaginary disorders of which they fully understand the symptoms and the treatment. Their remedies are as well adapted to any real disease as were those of Dr. Thomas Diaforus. Every intellectual weakness of the public tends in some way to facilitate or encourage their operations. They find the business of the country constantly

suffering from a lack of paper currency, and its industry from a lack of adequate encouragement on the part of Congress. They have complete systems of political economy and finance, ingeniously contrived to delude the public, but entitled to no higher rank among political economists than patent-medicine almanacs can claim among physicians. The worst of this class feel a direct interest in keeping the public from understanding their operations, and therefore increase their complexity in every way, and introduce some kind of financial legerdemain wherever it can be applied.

To one who considers the extent of this evil, the number of temptations to prey upon the public, the wide applicability of Samuel Butler's trite couplet, and the difficulty of obtaining precise information respecting financial measures, it would seem wonderful if we could find nothing worse than the Crédit Mobilier to show. As a matter of fact, the past half a dozen years have given rise to so many worse things on which public indignation might be profitably expended, that we may seriously inquire whether the attack on the Crédit Mobilier is not to be deplored as a diversion of our attention from the points to which it ought to have been directed.

The character of the Crédit Mobilier, as a financial scheme, is germane to our subject only so far as we may suppose members of Congress to have been acquainted with it, and to have been influenced by the hope of profit to be derived from it. It does not appear that, at the time, it was known as anything more than a contracting company to build the Union Pacific Railway; we need not therefore enter into any discussion of its legality, or of the moral category to which we are to assign it. The fact with which we are mainly concerned is essentially this: the principal promoter of the scheme, Mr. Oakes Ames, fearing that when the exact character of the operation became known public opinion would demand some adverse legislation on the part of Congress, sought to strengthen it by inducing a number of the strongest members to take small quantities of the stock. The plan had so much of the character of a snare, that it was essential to keep the object secret from the victims; he therefore assured them there was nothing improper in the transaction, for the reason that no further legislation would be

asked of Congress. The latter statement was entirely correct, indeed, rather too true, for further legislation on the subject was the very thing he wished to prevent. Some paid for the stock in cash; to others he claims to have allowed credit until the accruing dividends paid or helped to pay for the stock, when the surplus was bonded over to them.

The latter cases seem, at first sight, to savor much more of bribery or corruption than the others; but if we examine them we find that the transactions, as stated by Mr. Ames, were all in strict accordance with the customs of business and the law of contracts. The question of corruption is therefore, in these cases as in the others, to be decided entirely from accessory circumstances, if we admit that the contract to purchase was entered into really and in good faith. Since the existence of the contract lies at the base of the charges against the members in question, the prosecution cannot object to its being taken for granted. But it is to be remembered that in all these cases, which include only those of Messrs. Garfield, Kelly, and Colfax, the evidence is very weak, and the facts seriously contested. Against Messrs. Garfield and Kelly the evidence of Mr. Oakes Ames is so uncertain and vacillating, and so completely unsupported by any collateral circumstances, that hardly any weight should be assigned to it, and the explanations of those gentlemen must, we conceive, be regarded as satisfactory. We do not, however, press this point because, granting the worst that is alleged against them, they would still stand on the same footing with those who paid for their stock in advance, and all might still be considered together.

After an exhaustive investigation, the conduct of which was marred only by an ill-advised attempt to keep the testimony secret during its progress, the Poland Committee found no evidence of corrupt intent on the part of any member who purchased stock of Mr. Ames. The most gratifying feature of this report is its unanimity, a feature which has not offered itself in a Congressional investigation of a political subject during the last twenty years. Judging from all recent precedents, we should have expected a majority report declaring the Crédit Mobilier a patriotic undertaking, and all the members of Congress who had been willing to invest their funds in it entitled

to the gratitude of the country; and a minority report recommending every one of these same members for expulsion. Indeed, there are probably few sources of information to which the unpartisan public have, in recent years, attached less weight than to the reports of Congressional committees on facts having a political bearing. The change now inaugurated is one imperatively demanded to prevent Congress from falling into contempt, and it is to be earnestly hoped that the members of all future committees will adopt the very sensible view of Mr. Niblack: that desiring to vindicate the reputation of his party for purity, he will be more severe upon a delinquent of his own than upon one of the opposite party.

With such a report before us, and with the essential facts almost universally admitted, it might seem superfluous to enter into any discussion of the acts of those ten or twelve members who were rightfully or wrongfully suspected of purchasing Crédit Mobilier stock on the recommendation of Mr. Ames. But the public has such strong grounds for suspecting the existence of corruption in Congress, and the form which this corruption takes is one so different from that presupposed in all the law of the past, that there is a strong and highly commendable disposition to attack all parties who can be even suspected of improper motives in legislation. Now, the circumstances surrounding the operations of the Crédit Mobilier have been of so mysterious and striking a character, that their investigation seems to have dazzled the eyes of the public to nearly everything else. We must therefore ask permission to review some of the facts brought out in this case, and some of the general principles applicable to this and other cases. In doing this we shall not attempt to pass judgment upon, or even to consider, the case of each individual member, but shall confine our attention to those features which may throw light upon the nature of Mr. Oakes Ames's project, or illustrate our system of political management.

The most striking fact, and perhaps that which has lent most interest to the subject, is that so large a proportion of the members implicated have borne the highest character among the friends of reform as efficient and honest legislators, and that hardly one belongs to the class which a corrupt manager would

think of approaching with improper proposals. Indeed, the sprinkling of men whom such politicians as believe in using the powers of the government to further their personal and political ends would like to have out of the way, is sufficiently remarkable to excite suspicion. The only explanation of this fact which seems to have been thought of is, that Ames selected only the strongest men, to give as much character and influence as possible to his project. If we grant this, it only lessens the probability of a corrupt motive. But there is another circumstance which tends to weaken this explanation. Every one knows that the general features of nearly all the non-political legislation of Congress are decided on by the standing committees, and that the latter are especially potent in resisting legislation, because, in the ordinary course of things, every measure is in each House referred to the appropriate committee before being acted upon. If the committee do not think favorably of the measure, they can, in nineteen cases out of every twenty, kill it by simply making no report, and in the twentieth case their adverse report will carry that large portion of the House who, not having had time to examine deeply the merits of the question, will vote with the committee. Consequently, when Mr. Ames desired to guard against adverse legislation, his most effectual course would have been to make sure of the Pacific Railroad Committee, which was all the more easy and natural from the fact that he was himself a member of the committee, and therefore, it may be assumed, in daily confidential intercourse with the other members. Now, the second suspicious circumstance worthy of attention is, that not one of the members of Congress implicated in the Crédit Mobilier was, at the time of the transactions under consideration, a member of this committee, except Mr. Ames and Mr. Brooks; and the latter, it must be remembered, was not implicated on the testimony of Mr. Ames, but was caught by an accidental sweep of the net during the examination of McComb.

A third noteworthy circumstance is the disproportion of the supposed corruption-fund to the interests at stake. A half million for engineering a "job" of the magnitude of the Crédit Mobilier through the New York Legislature would have been considered cheap at Albany; and if the managers had

declared a million necessary, no objection would have been made. Congress is certainly not so cheap a body as the New York Legislature. Yet, if the facts are correctly brought out, the whole corruption-fund was only some two hundred shares, and two of the principal managers quarrelled over the question whether a score or so of shares should be allowed to Congressmen. At Albany Mr. Ames would have been laughed out of the lobby. It is not credible that financiers so acute seriously attempted a great operation with means so insignificant, nor that the votes of Messrs. Garfield and Kelly could have been secured by a payment of $329 to each.

When we consider that neither the characters, the antecedents, nor the positions of the members whom it is supposed that Mr. Oakes Ames attempted to corrupt would lead to their selection for such a purpose, and that the means used were ridiculously inadequate, one of two conclusions seems inevitable: either no serious attempt to influence Congress in an improper way was made at all, or, if it was made, the guilty parties have successfully eluded investigation, and put the public on a false scent after some of those members from whom corruptionists had least to expect.

The report of the Poland Committee affords us no data for judging which of these suppositions is the true one. For such data we must refer to the report of the committee presided over by Mr. Jeremiah M. Wilson, in which eighteen large closely printed octavo pages are devoted to a concise description of the financial transactions between the Union Pacific Railroad Company, the Crédit Mobilier Corporation, several real and sham contractors, and any number of trustees and assignees. To any one who wishes to know what is the financial management of the present day, we commend the careful study of this report, warning him, at the same time, that any attempt to keep the track of the operations in his own mind will be entirely hopeless unless he goes through a course of preliminary training in the higher mathematics. It seems from all the facts of the case that the managers had no intention of invoking the aid of Congress, but that the power of disposing of a small amount of the doubtful stock was handed over to Mr. Oakes Ames as trustee, to be used at his discretion

in strengthening the scheme before Congress and the country. It is not likely that any of the two parties had any definite ideas either of the best mode of doing this, or of the manner in which the benefit should accrue to them. The plan was inspired only by a vague fear of being called to account in the future, which suggested an equally vague idea that in such a case it would be a good thing to be able to point to Messrs. A, B, and C as stockholders in the project.

Whatever view we may take of the motives of Mr. Ames in selling the stock to members of Congress, there are three facts which we believe to be undeniable, and which are conclusive of the whole question of Congressional corruption in connection with the operations alluded to. They are: —

1. That the true character of the relations between the Crédit Mobilier and the Union Pacific Railway was entirely unknown outside of those immediately interested, and that it was to their interest that it should remain unknown.

2. That when Mr. Ames sought to induce members of Congress to purchase his stock, he not only carefully concealed the fact that its possession by a member of Congress was of doubtful propriety, but avoided giving them any reason to suspect improper motives on his part. We must remember, in this connection, that no cloud then rested on his character, and that he appeared to the members in question only as a personal friend and successful financier and man of business willing to aid them by his advice.

3. That it has never been shown or even claimed either that Mr. Ames had in view any specific emergency in which he expected to secure the votes of the members in question, or that their votes were in any case whatever influenced by their possession of the stock.

Such being the case, no blame whatever can, it seems to us, be attached to a single member on account of his having bought or agreed to buy Crédit Mobilier stock from Mr. Oakes Ames. It has, indeed, been said that the large dividends received were sufficient to excite suspicion that something was wrong. But there is hardly a case in which it has been clearly shown that any member received the enormous dividends known to have been earned by the operation. We shall

not, however, discuss the facts, because we conceive that the code of political ethics by which, granting the facts, the judgment is reached, and by which the public has judged all the members suspected of owning the stock, requires important alterations, if not entire reconstruction.

The case of Mr. Colfax affords an excellent illustration of what we mean. That gentleman was accused of making a profit of seven or eight hundred dollars by an investment in Crédit Mobilier. He secured a verdict of not proven by showing that during the year 1868 he had received private remittances amounting to four thousand dollars, towards defraying his personal and political expenses, from Mr. George F. Nesbit, of New York, a wealthy stationer, and proprietor of a lucrative contract for furnishing stamped envelopes to the Post-Office Department. Now, we claim that the simple fact that this contractor, an almost total stranger, Mr. Colfax says, should have been moved to such generosity toward him, is worse than the suspected profits from Mr. Oakes Ames. This is not saying a great deal, for the difference between Mr. Colfax disgraced by Crédit Mobilier and Mr. Colfax triumphant over it is so small that great subtlety of comprehension is required to grasp it. Both he and Mr. Ames tacitly agree upon these salient facts, that about December, 1867, he agreed to take two thousand dollars' worth of the stock, and to pay that amount for it, plus interest, minus dividends, as soon as he was able. In the following spring, an eighty per cent dividend in Union Pacific bonds having been meanwhile declared, Mr. Colfax was found indebted to Mr. Ames on account of the stock to the amount of $534.72, which he paid, thus becoming absolute owner of the stock, but receiving no certificate or evidence of any sort to that effect. During the following summer, finding that the company was involved in litigation, he made a verbal surrender of the stock to Mr. Ames, because he did not wish to be engaged in a lawsuit in any way whatever. But before this surrender an additional dividend of sixty per cent in cash was declared, which Mr. Ames asserts that he paid, while Mr. Colfax denies all knowledge of it. The whole question of Mr. Colfax's guilt or innocence has been made to turn on his reception or non-reception of this divi-

dend, — a matter of no importance whatever, because if he did not receive it, he had a clear legal right to it. The intrinsic improbability that he had any corrupt motive has been already shown by the consideration that it was necessary to the success of Mr. Ames's plans that any corrupt motive on his part should be concealed from his victims, and if there was anything wrong in the investment, the plea that after all it proved a losing one was a very poor defence. We trust it will be long before a faculty for losing money in bad investments will be esteemed a desirable qualification in a legislator.

On the other hand, when Mr. Colfax proceeds to tell the public how he got the $1200 which he deposited in a bank two days after the date of Ames's check, he tells a story suggestive of political corruption in one of the most common and insidious forms which it now takes. So far as Congress is concerned, the day of bribery, as defined in the statute books, has passed by. The operator no longer bribes a member of Congress or a judge. He manages matters so as to own him in fee simple. The most common tie by which he holds his property is that of gratitude. He makes liberal contributions towards filling his private purse, and defraying the expenses of his election. He takes good care of two things: first, that the beneficiary shall know from whom the money comes; secondly, that the gift shall be accompanied by the assurance that he desires nothing in return, either in the form of office or favor, and that it is prompted solely by his admiration for the high personal character of the man in whom he takes so deep an interest. And yet he knows very well that if an occasion should arise to afford the latter an opportunity to get his benefactor out of some difficulty, he will not be so lost to all the ties of gratitude as to refuse to lend a helping hand. Hard hearted indeed must be the man who would object to the return of bread thus cast upon the waters. Men who have large money transactions, either directly with the government, or with the public through channels over which the government may have some control, know very well that a friend in need is a friend indeed, and if he can be secured by a present, the latter may prove a good paying investment.

It seems quite likely that Mr. Nesbit's overflowing liberality

was of this calculating kind. He made no attempt to prevent his left hand from knowing what his right hand did. There are too many committees to whom confidential contributions toward the election of any officer can be sent, to render it necessary, in any case, to make the candidate himself the medium of transmission. There are plenty of ways in which a friend can diminish the expenses of a government officer to the amount of a thousand dollars, without the officer knowing who did it. That Mr. Nesbit had strong reasons for choosing none of these ways is pretty clearly shown by the statement, which we believe is admitted, that Mr. Colfax did have it in his power to do him or his heirs one or more little favors through his influence with the Post-Office Department, and, we may fairly suppose, did thus prove the wisdom of Mr. Nesbit's investment.

If anything more is wanting to show the entire absurdity of the test by which Mr. Colfax has been tried at the bar of public opinion, it is found in the fact that neither he nor his friends claim for him any higher merits than ignorance of the well-established fact that a dividend was due him on the stock he had purchased, and such aversion to litigation that he threw away valuable property rather than be a member of a corporation engaged in a lawsuit. He does not claim that he would have refused the dividend had it been tendered him, or that he threw away the stock because it was wrong to keep it. The former would have looked very foolish, after accepting so many pecuniary favors from Mr. Nesbit; and the latter would have exposed him to the charge of knowing or suspecting the wicked doings of the Crédit Mobilier, without trying to expose or stop them. The defence is simply maudlin sentimentality. To prove his trustworthiness, he had much better have shown that he kept the run of his dividends with care and precision, and collected them promptly when due. We are sure that a conscientious legislator is much more likely to be found in one who would spend a hundred dollars in a lawsuit rather than be defrauded out of five, than in one who would throw away two thousand dollars' worth of property rather than have anything to do with litigation.

Another instance of failure to apprehend the real danger and evil of the situation is afforded by the report of the Senate

Crédit Mobilier Committee on the cases of Senators Patterson and Harlan. In the case of the former the report seems to us unjust in a degree that can only be accounted for by extreme haste of preparation, joined with the excitement which the subject had caused in the public mind. Indeed, the former is sufficiently evinced by the structure of many of the sentences. To show that the Senators were treated with unwarrantable severity, it is hardly necessary to go behind the statement of facts presented by the committee. A person who had not read the newspapers during the investigation might read the indictment nearly through without forming any clear idea of what the wrong consisted in. The detailed narrative of Mr. Patterson's transactions and the final summing up bear strong internal evidence of being the work of different hands. The salient facts, as stated in the narrative, begin with the statement that in August, 1867, Mr. Patterson purchased from Mr. Ames thirty shares of Crédit Mobilier, paying for them three thousand dollars, which the committee distinctly state was at that time its market value. It must be admitted, at the outset, that inducing a member to purchase stock for cash at its market value is a novelty in the annals of bribery. On this stock he drew large dividends in February and June, 1868, and afterward, in cash, stocks, and bonds. The magnitude of these dividends was the only ground he had for supposing anything wrong; and, in animadverting upon them, the committee seem deeply imbued with the idea that, in stock speculation, it is morally much worse to make a good investment than a bad one.

The final summing up and the narrative disagree upon two important points. While the latter states that the price paid was the market value, the former states that it was far below the "esteemed" value. According to the latter all corrupt purposes were carefully concealed, even the expected increase of value of the stock being kept a secret, to be disclosed through the magnitude of the dividends; the former asserts that he had full knowledge of the corrupt objects of Mr. Ames in thus dealing with him. As the whole weight of evidence and probability is on the side of the committee's narrative and against their summing up, we must hold that there is no proof whatever of any corruption on Mr. Patterson's part in holding the question-

able stock. The only serious fault of which he can be reasonably accused is that of wilfully making a false statement before the House committee; and, as he admitted its incorrectness as soon as confronted with the proof, the only question is, whether he really knew it to be incorrect when he made it. As this is not a question in which any political principle is involved, we shall dismiss it with the single remark that while it may, from a hasty glance at the case, seem very improbable that he was not aware of the fact, there are several accessory circumstances which lessen this improbability, and make it difficult to accept the theory that he wilfully made a false statement.

We find that there was a gentleman to whom Senator Harlan stood in the same relation in which Mr. Colfax stood to Mr. Nesbit, leaving it with our readers to apply to that relation such general name as they may consider appropriate. This gentleman was Mr. Thomas C. Durant, who was at the same time vice-president of the Union Pacific Railroad, director of the Crédit Mobilier, and trustee of the Oakes Ames contract. He had paid Mr. Harlan ten thousand dollars to enable him to get elected senator from Iowa. In almost every point Mr. Harlan's case is worse than that of Mr. Patterson. They were on an equality only on the single point of no evidence being found that their votes as senators were in any specific case influenced by the transactions referred to. But in Mr. Harlan's case there was no pretence that the gift was a dividend on stock he owned; he had, therefore, far more reason to suspect corrupt motives than Mr. Patterson had. What was yet worse, he placed himself under an obligation to his benefactor, which he must have known would be embarrassing if the latter should want his vote, while Mr. Patterson was under no such obligation to Ames. In the absence of proof that Mr. Harlan, in his capacity of senator, had done any thing corrupt for Mr. Durant, the committee cannot be blamed for acquitting him. But no one will believe for a moment that a railroad man will pay ten thousand dollars to secure the election of a senator, without having good reason to know that it is to his pecuniary advantage so to do; though whether the consideration was paid for services rendered in times past, or for some specific service to be rendered

in the future, is not definitely settled. The case may be taken to illustrate the insufficiency of the ethical standard by which the public mind measures such transactions. For example, in some very excellent quarters the committee have been criticised for not examining more closely whether Mr. Harlan did not apply Mr. Durant's money to his own private use, instead of employing it in the senatorial canvass. In this it is implied that the distinction between the two modes of applying the money is one of public importance, as affecting the purity of the transaction. In fact, however, it is of no importance at all. Mr. Harlan's election probably cost him more than the sum given by Mr. Durant, so that this sum was an equal relief to his own pocket, in which way soever it was applied. If it was not so, the senatorship was a gift equivalent to the money. The man who makes a senator certainly owns him more than he who simply makes him a gift. If financial managers are to be allowed to carry senatorial elections in this way, we had better transfer to them the duties of the election, so that their power shall be accompanied by its full share of responsibilty.

The stress which the Morrill committee lay upon the fact that there was no corrupt contract between Mr. Harlan and Mr. Durant, and no understanding that the former should, after reaching the Senate, vote as the latter wished, shows an entire failure to appreciate the exigencies of the situation. The fact is true, but there was no understanding simply because none was necessary. Mr. Durant, considered as a representative man, had no intention of engaging in any scheme which would shock the moral sense of the community to such an extent as seriously to compromise the standing of his supporters. He only wanted help in matters where it might be given without incurring great public displeasure. And he knew Mr. Harlan well enough to be fully aware that he could rely upon his gratitude to his benefactor in any case of this sort which might arise. We need only add that nearly all the great financial and political abuses of the day are of the sort alluded to.

Our views of the principles involved in the recent charges of corruption may seem to differ so widely from those usually taken as to render a more categorical statement of them neces-

sary. We claim that the financial corruption of the present day, as exhibited in Congress, does not consist in purchasing the votes of members, or in entering with them into corrupt agreements where their votes come in as an element, but in placing them in such a position that they feel under a moral obligation to vote as they are desired to, unless doing so would wholly violate their sense of right or of honor. Our position is, therefore, that no member of Congress, present or prospective, should allow himself to be placed in such a situation. He should accept no present from any one when he has the slightest reason to fear that the donor may ever wish for any influence in return. In regard to every individual and every interest which is likely to be seriously affected either by legislation or by governmental influence, public opinion must place legislators in the same position with judges, whom it forbids to receive valuable presents from parties engaged in litigation. We have tried each member whose case we have considered by these rules, condemning them where they seemed to be violated, and exonerating them in the opposite case.

The future of our Senate is most deeply involved in the charges brought against a number of its members of using dishonest means to secure their election. We occasionally see indications of a tendency on the part of the House to overshadow the Senate in the same way that the British Commons overshadows the House of Lords. We hold it of great importance to the stability of our government that the Senate should be able to resist this tendency, and this it cannot do unless its honor is above suspicion. From this point of view the escape of the Kansas Senators is hardly less than a national misfortune, not merely because they go unpunished, but because the Senate was thus deprived of the opportunity of proving that it was determined to preserve its purity at all hazards, — a determination which, at the present time, it is urgently necessary should be exhibited. The public has good reason to fear that if Mr. Caldwell had not resigned, he would have been allowed to retain his seat, and that thus the Senate is quite prepared to establish, in practice if not in theory, that the tenure of a seat gained by bribery is as secure as one gained in any other way. We say this, admitting that the evidence

against him was scarcely such as would suffice to convict a man of good character of an infamous crime. But it is as strong as we can ever hope to obtain in any case of the kind. We must always encounter the difficulty that, as a general rule, only bad men are concerned in the business or know anything positively about it, and that if their evidence is on the side of the prosecution it necessarily criminates themselves.

Important as was the question of fact in this case, the points of law made by Mr. Conkling and others in the Senate are of vastly more importance, especially when taken in conjunction with those made by Mr. Butler in the House, in the case of the proposed expulsion of Messrs. Ames and Brooks. The point of law sustained by Mr. Conkling is briefly this: When an election of senator is conducted in exact accordance with the legal forms in such case made and provided, and the certificates of that fact and of the result of the election are all genuine and in due form, the Senate cannot invalidate the election by going behind it and inquiring into the motives of the electors in voting as they did. This legal principle was sustained by a curious combination of extremes; Mr. Conkling being joined by a number of leading Democrats, who feared that granting such power to the Senate would afford a dangerous precedent for interfering with senatorial elections in general, when the dominant party might be dissatisfied with the result. Mr. Butler's point of law is, that a member cannot be expelled for any act committed before his election.

The subject to which we wish to call attention is the splendid field which this law opens to the briber. He has only to reverse his usual mode of proceeding, by making a written contract with each member of the legislature, specifying that, in consideration of a certain sum, the member agrees to vote for him as senator, and to pay over the sum named, in the presence of witnesses, before the day of election. Then, when it is all found out, if the Senate undertakes to expel him, he exhibits his documents and produces his evidence showing that the transactions occurred before his election as senator, so that, under Mr. Butler's law, the Senate has no right to expel him. If an attempt to invalidate his election is made, Mr. Conkling's law comes to his aid, by showing that his certificates are all

genuine and in due form, and that no one has a right to inquire further into the matter. Indeed, he can very easily arrange the matter so as to avoid all necessity for citing Mr. Butler's law, and escape under Mr. Conkling's law alone. He has only to sell himself secretly in advance to some corporation, and let the latter make all the arrangements with the members of the legislature. Not a shadow of wrong can then be thrown on his own good name; he has been elected in due form, it is not his fault if another person was guilty of bribery, and nothing at all can be done to him under the law in question.

We do not propose to discuss the legal question with Mr. Conkling. To do so would be as puerile as to argue whether a city on fire might lawfully burn down. That such a principle, under such circumstances, should have been propounded by a prominent member of the Senate Judiciary Committee, that it should have been supported by a large body of able men in the Senate and by leading journals in the interest of the dominant party, and that the country should finally have been left in doubt whether it would not have been seriously accepted and acted upon by the Senate itself, are altogether the severest blows which the honor, dignity, and influence of our highest legislative body has ever received, no matter how strong the legal arguments by which it may be sustained.

We have said that the evidence against Mr. Caldwell was scarcely such as would convict a man of high character of an infamous crime. At the same time we have held that the Senate ought to have adopted the report of Mr. Morton's committee invalidating his election, without giving him a chance to escape by resignation. These two propositions may call for some explanation. The Senate has, in recent years, fallen into suspicion to an extent that should inspire its members and the whole country with alarm. In the normal state of things, the assertion that a senator had gained his seat by corrupt means ought to be received by the public with universal incredulity, as something inexplicable and most improbable. This state of things is tacitly presupposed when we extend to cases like that of Mr. Caldwell the maxim of criminal law: better that twenty guilty men should escape than that one innocent one should suffer. But the actual state of things is very different.

The public know or believe the legislatures of one third of the States of the Union, perhaps we might say one half, to be more or less corrupt, many of them thoroughly corrupt. Where there are corrupt legislatures, there will always be corrupt men to manage them. The consequence is, that charges of corruption against one third of the Senate will not be received with incredulity, but will be looked upon as things not at all improbable, however difficult it may be to prove them. In this very opinion, apart from all evidence to sustain it, we have a loss of public confidence in the Senate which should alarm every thinking man. The danger is all the worse for belonging to that class which men are most prone to overlook, — dangers arising from hidden causes which give no striking evidence of their existence. The average politician thinks nothing of changes in public sentiment, unless they are accompanied by some popular outbreak. He defends his edifice against direct assault; the possibility that it may be completely undermined without his knowing it until too late, never enters his mind.

When the public so strongly suspects the purity of one third of the Senate, it will not do for the latter to wait for unattainable legal evidence before exhibiting a determination to purify itself. When we have confided to a man so great a trust as that of the office of senator, and when we suspect his purity, it will not satisfy us if investigation is only able to bring to light evidence so contradictory on the part of his associates that we hardly know what to believe. When, from the very nature of the case, unimpeachable evidence cannot be obtained, and when action of some sort is urgently demanded, we are obliged to act on probable evidence.

The hesitation of the Senate to take action in this case proceeded, not merely from a failure to apprehend the gravity of the situation, but from a mode of viewing the subject which is at the bottom of many of our political abuses and notably of those in the civil service. We have gradually fallen into the habit of looking upon an office as a piece of personal property, owned by the person who is so fortunate as to come into possession of it, or by the officer who possesses the appointing power. Probably the majority looked upon Mr. Caldwell as

they would have looked upon a man who had rented a farm for six years, and whom it was now proposed to oust from possession, so that a great moral wrong was about to be done, unless it was clearly proved that he had forfeited his right. We hold that this view is fundamentally wrong. The republican idea of an office is not that of a right with which the office-holder is invested, but of a trust which he is executing for the benefit of others. The principal difference between a king and a president is, that the former professes to hold some divine or other right to his position, while no such right is possessed by the latter. That men should think of tenure of office as a right shows how difficult it is, even in this advanced stage of civilization, to seize in all their breadth and apply to all cases the fundamental ideas of a representative government. The senatorship being a trust which Mr. Caldwell was executing for the people of Kansas, and not a right with which he was invested, no moral wrong would have been done him by depriving him of it. If any wrong was done, it was done to the people of Kansas, and they had ample opportunity to rectify it before Congress again met by re-electing him.

Admitted corruption is not the only bad feature of our politics. The decay in the public sense of delicacy and propriety is equally striking, and perhaps equally worthy of attention; because, even if a less evil than positive corruption, it is more easy to remedy by a healthy public sentiment. By the sense of delicacy and propriety we mean that instinct which revolts not merely at the thought of breaches of the statute law, but at the idea of any act which can give rise to a reasonable suspicion of selfish, sinister, or improper motives. Until a quite recent period the respect for this instinct shown by our public men in their relations to the public was a highly gratifying, though almost unnoticed feature of our politics. But when the war of the Rebellion broke out, every other idea was subordinated to that of its vigorous prosecution; and before we had time to recover from the demoralizing effect of this subordination, the war with President Johnson assumed a phase in which official propriety looked like child's play. This state of things culminated during the impeachment trial in the scandalous spectacle of the very man who was to assume the President's

office, in case of Johnson's removal, being allowed to vote for his guilt.

As if to return to their constituents with the worst possible name, the Forty-third Congress signalized its closing hours by a grave offence of like character with those above stated, in voting about a million and a half from the public Treasury into the pockets of its members. The impropriety of the act consisted less in its wrongfulness from a moral point of view than in the contempt shown by Congress for its own good name. After the ordeal it had passed through, one would have expected to find it on its good behavior during its closing days, instead of which it took pains to show that a reputation for good behavior was the last thing it cared for. With respect to their sentiments and votes on the back pay question, members may be divided into three classes: those who supported it on its merits, those who opposed and fought it to the end, and those who, while opposed to it on principle, yielded rather than endanger the Appropriation Bill to which it was appended. The first class would seem to have been in a considerable minority in the House, so that the provision was put into the bill against the wishes of the majority. This was done under a system of which some complaint has recently been made, namely, that which gives committees a controlling voice in legislation. The final committee of conference on the Appropriation Bill in question was composed of six members, three from each house, and it would seem that only one out of the six, Mr. Garfield, was opposed to the back pay. The committee reporting in favor of the measure, there was no course but to accept it, or to call for a new committee of conference. The closing hour was so near that this course would have endangered the bill, and the number of members who, though opposed to the measure, were unwilling to do this was sufficient to secure its acceptance.

These men, we conceive, deserve sympathy rather than reproof at our hands, for the reason that they seem likely to be the worst punished. Of the original supporters of the measure, the most either had nothing to lose politically or represented constituencies who care little for the character of Congress. The really good men, who felt themselves forced to join them, made, we conceive, a grave mistake; but if we reflect that by

continuing the contest, they might have had to face their constituents with the charge that they had made an extra session of Congress necessary, we may admit that the mistake was only one of judgment. The system which gave rise to such an act is one which it is much easier to criticise than to find a remedy for. Bad as it sometimes looks, he would be a bold man who should attempt to contrive any better mode of discussing and passing laws than that actually adopted. Improvements in legislation and in the general tone of Congress must be sought rather by a better mode of choosing members.

An excellent beginning toward a better state of things will be made if the public will relieve candidates for office from the degrading business of personally engaging in efforts to secure their nomination. We all remember the time when, if a candidate for Congress was in the town where a nominating convention was held, his friends kept him carefully concealed from public view, to be sent for only in case he was successful. The disposition now seems to be to look upon all this as mere formalism; but the customs of civilized society have their origin in a sense of public propriety and in a feeling of mutual respect, which cannot be set aside without speedily depriving society itself of the marks of civilization. The spectacle presented in Massachusetts, two years ago, of a gubernatorial candidate endeavoring to force his own nomination through a convention was, comparatively, as great a blemish on our civilization as if our people should all throw off the manners of ladies and gentlemen. A reform in this direction is one of the easiest things in the world to carry out; it is only necessary to adopt the rule of voting for nobody who is on the ground soliciting votes or influence. This reform is demanded on grounds much more cogent than those of simple good taste. The frequency, we might almost say the universality, of bargains, expressed or implied, between candidates and political leaders, is probably at the bottom of more corruption than is commonly supposed. Even where there is no bargain, the consciousness, on the part of an officer, that he owes his election, not to the spontaneous action of his constituents, but to the working capacity of a few friends, must be demoralizing. If these friends have private interests which they wish him to employ his offi-

cial position in promoting, and if their support was given on his personal solicitation, he can preserve his purity only by an act which his political supporters may look upon as one of base ingratitude.

If, in discussing the proper remedy for our political evils, we should begin by saying that every reform must have its origin in a healthy public sentiment, which can be produced only by a very slow and gradual process of education, the proposition might seem too trite to be formally propounded. We mention it to show that one of the most needed reforms is that of the press. The daily and weekly journals are now our great educators. To say that the great majority of them admit of a decided improvement in the tone of their comments on public affairs must not be taken as an unqualified reflection upon their conductors. If we consider how numerous are the private and party interests which are willing liberally to reward a journal for supporting them, and how s'ow in comparison are the returns from a single-minded devotion to the public interests, we shall find more cause for congratulation that our press is as pure as it is than for complaint that it is not better. There is, however, one class of journals to which this consideration cannot be applied, namely, those published at the national capital. The Washington journals are legitimate subjects of criticism, because most of them are in great part supported by the national government, and may therefore be fairly taken as specimens of governmental contributions to journalism. They are, in fact, employed to advertise proposals for services and supplies to be rendered all over the Union. In papers the existence of which is hardly known outside the District of Columbia, we find announcements at full length of sales of mules in Nebraska, old stoves in Kentucky, and grain sacks in Kansas, with whole columns inviting proposals for furnishing wood, hay, oats, and straw in New York, Pensacola, St. Paul, and San Francisco. A fourth part of the entire paper is frequently thus occupied with useless advertisements, which are kept in up to the very morning on which the time expires, so that the reader will frequently see an announcement that a government sale of old stores is taking place in Texas or Dacotah at the very time he is reading.

It is difficult to conceive that this patronage has any other object than that of sustaining the journals thus favored in the work of "supporting the government." It is needless to say that they do this to the best of their ability, but it is a serious question whether their support is not a greater source of weakness than of strength to the administration. Must not the latter suffer by being associated in men's minds with journals which have distinguished themselves only by the defence of every corruptionist and every abuse that has been exposed during the past few years, and by attacks on every effort to correct such corruption and abuses? The fact is, that Washington has got to be a sort of national cockpit in which the two parties pit their opposing papers and organizations against each other for their own gratification. The contests are of hardly more importance in politics than those of the sporting world are in civilization, yet they are kept up at the expense of the nation.

The wrong thus done is intensified by the fact that the national capital offers a splendid field for a high class of journalism in every respect except lucrativeness. A newspaper of the first class, published on the spot, has an opportunity of following the daily current of political events, and becoming intimately acquainted with the inner working of the governmental machinery which cannot be enjoyed by one published elsewhere, while, at the same time, it reaches the immediate leaders of public opinion in every part of the Union. Such a journal would now find the government competing with it by the support of papers of the lowest class.

We may expect something from civil service reform in promoting, not only general purity of administration, but legislative efficiency. The member of Congress has hitherto had so much to do with the disposal of offices and other political matters belonging to the executive department of the government, that he has had too little time and attention left him for his legislative duties, and this is one of the principal causes from which legislation has hitherto suffered. Another object of the reform is to stop the bargaining and sale of offices by unscrupulous men for the purpose of securing their own personal advancement. The extent to which this scandalous practice is carried under the old system is entirely unknown to the public,

because, as in any other case of bribery, it is for the interest of the parties concerned to hide their transactions.

Among the practices not positively criminal at which the efforts of reformers are now aimed, the abuse of the civil service is the solitary one which does not admit of any defence whatever. It may be claimed, without positive unreasonableness, that the facile politician, trimming his sails to suit every breath of political opinion, is the one who has most respect for the views of his fellow-men, and who seeks to represent the exact feelings of his constituents, while the representative whom we praise for his conscientious adherence to what he believes to be for the best, against any amount of outside pressure, is, after all, only an obstinate man who considers his own opinion worth more than that of the public. The astute manager may be defended as one who can best divine the wishes of the public. Political conventions may accurately reflect the views of the party; and if they suffer themselves to be led by a dozen men, it may be claimed that it is because this dozen know exactly what ought to be done. That large and often mischievous class of working politicians who never seek office for themselves admit of eulogy as unselfish patriots, and the value of their work may be defended by arguments not unworthy of notice. But the use of the appointing power to forward the political objects of its possessors is not seriously defended by any one worth listening to, for the simple reason that no valid defence is possible. When we claim that the consciousness, on the part of a public officer, that he has gained his office, not by especial fitness for it, but by doing work for the dominant party, and that its tenure depends, not on the manner in which he performs its duties, but on the satisfaction he gives to a set of men who have no interest whatever in it, is totally demoralizing to the public service, we claim what there is none to dispute. Our adversaries defend their position only in an indirect way, by attacking every one who proposes to effectually change the practice, and every measure which tends to such a change. These attacks are urged on by so influential a party, that a brief statement of what we believe to be the position of civil service reformers may not be out of place.

Offices are created, not for the benefit of the appointing

power, or of the holder, but for that of the public. Since the number of offices is very small compared to the number of citizens ready to fill them, a selection must be made from the latter. Among those equally well qualified and willing to accept, the appointing power should select the one who, by his intellectual capacity and wide intelligence, is most likely to prove a valuable officer in the future. Every man who admits that intellectual capacity and wide intelligence are qualities of the highest value in every servant of the government down to the lowest, and who conscientiously desires to make their possession the test of appointment, is to be classed as a civil service reformer, whatever be his opinions of the best mode of testing the possession of the qualities sought for. We only demand that he shall accept the logical consequences of the principles he professes to hold.

The first consequence is that the test must be a competitive one. In the case of those minor offices which cannot be filled by men of wide reputation, it is impossible to learn who is best qualified except by inviting every one whom there is reason to believe competent to come forward and make known his qualifications, in order that the best obtainable officer may be selected. The only point on which opinions can reasonably differ is the choice of the proper test. On this we shall only say, that there is no surer mark of the possession of those qualities which make a man valuable to his fellows than the propensity to acquire superfluous knowledge. We might claim that all human progress is due to this propensity, and that the civil service reformers are fully justified in making it the main criterion by which to judge of the value of an officer to the government. From this point of view, the fears entertained by a large body of the public lest candidates shall be examined on matters not germane to the duties of the office they seek are simply pitiable, and the only fault to be found with the civil service examinations is, that they indicate too deeply the influence of this fear.

Outside of the regular routine of legislation, two of the most important bills before Congress were those for the restoration of the currency and the revival of American commerce. We believe the former is the only subject on which all parties are

unanimous, it being universally conceded that specie payment is an excellent thing. We are indeed aware that Mr. Butler proposed to dispense with all allusion to a material basis of any sort for our currency, by having the government issue "certificates of value," each of which should certify that it was a real dollar; and we have heard that some one followed up the idea by proposing the issue of certificates of edibility, each of which should certify that it was a loaf of bread: such exceptions are, however, too rare to be counted. But we no sooner approach any measure looking to the attainment of this desirable end, than unity becomes diversity. We are first met by the Philadelphia school of political economists. They do not possess the faculty of making their ideas clearly understood by others, but so far as can be gathered from their arguments, they consider the end in view too excellent to be even sought for until a much more advanced stage of human progress is reached, and deem it, at present, much more advisable to move in the opposite direction. We then meet a class, including a large proportion of the business community, who fear the effect of the change on the business of the country; and then a yet larger class who do not see how specie payments can be reached; and yet another who would rather wait until we are better prepared for the change; and, finally, a class who think we had better grow up to specie payments. When the test question is reached, only a very small party is left in its favor.

It is difficult to say whether there is most to encourage or discourage us in what was done by Congress, or rather by the Senate, during the three days devoted to the discussion of the subject. It is, we believe, the first occasion on which any measure even looking to a restoration of our currency has actually come before either house of Congress since the war. This would seem to indicate that public sentiment is really advancing in this direction. But when we examine the debate in the Senate, we find so complete a failure to grasp the problem in its practical bearings, that it might seem almost hopeless ever to expect intelligent action on the subject in Congress. To make this clear, it is only necessary to show what are the most important practical questions involved in the problem.

Specie payment means the redemption by the government,

in coin, of every legal-tender note of which the holder chooses to demand payment at the Treasury. To do this, the first step on the part of the government, and the step to which all others must be subordinate, is to provide the necessary coin to pay all the notes which are likely to be presented. To make intelligent provision for taking this step, and, indeed, to form any intelligent judgment whether it is practicable to resume at all, we must be able to form some rough estimate of the probable amount of greenbacks which will be presented for redemption. If they are all to be presented within a short space of time, a corresponding quantity of interest-bearing bonds must be thrown upon the market, and the problem is, in consequence, one of great difficulty, politically and financially. If, on the other hand, they come in so slowly that they can be absorbed by the surplus gold revenue of the government, the policy of resumption is so simple and easy that there is no valid excuse for deferring it a single day.

Therefore, the great practical question involved in any plan of resumption is this: contemporaneously with resumption can we adopt a policy which, while in no manner abridging either the right of every holder of a greenback to receive coin for it or the obligation of the government to pay it, shall reduce the amount which will be presented for payment to a minimum? This is the first test by which every proposed plan must be tried, because, until we have some idea, however vague, of what is involved in the plan, we can form no intelligent judgment of our ability to carry it out. Not only is this test the first one by which to try the financial feasibility of any plan, but also to try its political advisability. In fact, the great political difficulty involved in resumption arises from the fears of the business and moneyed classes that there will be a great withdrawal of greenbacks from circulation, to be followed by some sort of financial cataclysm. The smaller the amount of greenbacks presented for payment, the smaller the basis for these fears.

Keeping these considerations in mind, the unsatisfactory character of the Senate debate may be judged from the circumstances that not only was this first and main question not raised at all, but not a single speaker gave any evidence of

seeing that it was involved in any proposed plan of resumption, or that the quantity of greenbacks to be redeemed could be in any manner affected by any financial policy the government might adopt, and that the principal measure proposed by the bill was one the effect of which would be to increase, to the largest possible extent, the amount of greenbacks which would be presented for redemption, and thus to make resumption as difficult as possible. Debate was almost wholly confined to the details of certain changes proposed in the National Banking law, and the question of the expediency of any definite plan for resuming specie payments was really not reached at all.

To make an intelligent survey of the field presented to our view by the proposal to resume specie payments, we have first to examine the facts and principles involved. By the public debt statements of the last few months, it appears that the total amount of United States legal-tender notes outstanding is, in round numbers, about $360,000,000, of which about $110,000,000 are held by the National Banks and the Treasury as the legal reserve against the bank circulation and deposits, leaving about $250,000,000 in actual circulation among the people. To this we are to add $330,000,000 of National Bank notes, making the total paper circulation of the country about $580,000,000, exclusive of fractional currency. By the policy of resumption this whole mass will become redeemable in coin, — the greenbacks directly, the bank-notes indirectly, because the holders can convert them first into greenbacks at the banks, and the latter into coin at the Treasury. Now, are there any principles or any facts of experience by which we can judge how much of this $580,000,000 is coming in for redemption? There are not, indeed, any mathematical rules by which a precise mathematical determination of the amount can be made; but there is a general principle, founded on experience, by which a judgment may be formed. This principle is briefly as follows: that the absolute value of the entire circulating medium of the country is nearly constant so long as the amount of business to be transacted does not vary; and when business increases, the aggregate value of the currency must increase with it. This principle is so frequently misunderstood

and misapplied that some explanation of it is necessary. We use the term "absolute value" instead of "volume" of the currency, because the latter expression is entirely deceptive. It is commonly used to denote the entire number of dollars in circulation, but this would not properly express the sum total of the currency. If one should compare the circulating media of England and America, and conclude that we had five times as much circulation as England because we had five times as many dollars as England had pounds, reasoning on the supposition that the pound and the dollar were the same, every one would smile at the blunder. But the dollar of to-day and the dollar of fifteen years ago differ as much in kind, if not in degree, as the dollar and the pound, and it is almost as serious a blunder to confound the two former as the two latter. The dollar of 1860, 1864, and 1871 are as distinct as if they had been called by different names. The only way to compare them is by their average purchasing power. We thus find that, although the gold dollar, when measured by the current standard, is worth some eighteen per cent more to-day than it was fifteen years ago, its absolute value is really less now than it was then, because it will purchase a less average amount of commodities now than then. Therefore, when we speak of the absolute value of the entire circulating medium, we mean its total purchasing power, and not the number of dollars. By the principle in question, if we increase the volume of the currency, we shall sooner or later diminish the purchasing power of each individual dollar in the same proportion, unless the change is prevented by some counteracting cause. So, also, we cannot permanently increase the purchasing power of each dollar without finding some outlet for the surplus currency which will then be in circulation owing to fewer dollars being necessary to transact all the business of the country on the new basis.

We conceive that the principle in question has been frequently misapplied through a misconception of what ought to be taken as forming the aggregate circulating medium of the country. It is customary to include under this term only what we may, for the sake of distinction, call material currency; namely, specie and circulating notes. But a little consideration will

show that simple bank deposits should be included in the same category. If we inquire why it is that there is any limit to the total volume of currency which can be kept in circulation without depreciation, we shall find it to be because the money does not yield interest to the individual holder. The sum total of "money on hand," which one has at any moment, according to his own estimate, consists of two portions, first, bank-notes, coin, or legal-tender notes in his pocket or his safe, and secondly, funds which he has deposited to his credit in a bank. He always tries to arrange his business so as to have this sum total as small as possible, because it does not bear interest either in the safe or the bank. Now men almost universally think that money in the bank is of the same kind with money in the safe, only in another place. But the amount of bank deposits can be increased indefinitely, without any corresponding increase of circulating notes, by simply discounting the notes of individuals; and we know, as a matter of fact, that the bank deposits of New York far exceed the amount of notes either in the bank vaults or in circulation.

It follows from this that the comparative estimates of the amount of circulating medium in different countries and at different times, as usually presented, are quite deceptive, because the important item of bank credits is usually omitted from the aggregate. The following is a statement of the probable aggregate circulation of this country, either averaged through several years or outstanding at a particular time: —

First Period, 1854 *to* 1857, *inclusive.*

Average amount of bank-notes in circulation,	$ 200,000,000
" amount of bank deposits,	205,000,000
Amount of gold in actual circulation (estimated),	50,000,000
Total average volume of the currency,	$ 455,000,000
Average population,	27,000,000
Average circulation per head,	$ 17

The crisis of 1857 was followed by a great falling off in the volume of the currency, which, however, was made up again during the year 1858.

Second Period, 1858 *to* 1861, *inclusive.*

Average amount of bank-notes in circulation,	$ 189,000,000
" amount of bank deposits,	239,000,000
Amount of gold in actual circulation (estimated),	50,000,000
Total average volume of currency,	$ 478,000,000
Average population,	30,500,000
Average circulation per head,	$ 15.66

The estimated amount of gold currency is very uncertain. It should include only that held by individuals for daily use.

Thirdly, at the date of February 28, 1873.

Legal-tender notes in circulation, about	$ 248,000,000
National Bank notes, about	330,000,000
Bank deposits,	656,000,000
Total volume of currency,	$ 1,234,000,000
Population (probably),	41,000,000
Circulation per head,	$ 30

It appears that our nominal circulation per head of population is now eighty-five per cent greater than the average during the eight years which preceded the war. If we adopt, without modification, the principle of constant ratio between prices and circulation, we should conclude that the average scale of prices was about eighty-five per cent higher now than before the war. But several causes conspire to change this ratio, and, as a matter of fact, average prices have not risen so much. In a general way we may say that agricultural products, excepting cotton, have scarcely risen at all, while manufactures of all sorts have risen from fifty to one hundred per cent. The average rise is probably not far from fifty per cent, and, if so, we have the difference between one hundred and fifty and one hundred and eighty-five to be accounted for by other causes. Two causes, which conspire to make up this difference, are: —

1. The hope that the government may provide for the redemption of the currency in specie or bonds, which makes the dollar a little more valuable than it would otherwise be.

2. The curtailment of the credit system. Credit being a great economizer of money, any cause which diminishes it increases the necessity for currency proper.

The principle we have discussed affords the means of forming a judgment on the amount of legal-tender notes which will probably be presented for redemption. The premium on gold during the past four years has ranged between ten and thirty per cent. Hence, if the purchasing power of gold remains unaltered by the change of policy, which we have reason to believe, the purchasing power of the legal-tender dollar will be increased by a corresponding percentage. We may conclude, therefore, that probably between ten and twenty-five per cent of the total paper circulation of the country would come in for redemption, — the amount varying with the state of business, and especially of the foreign exchanges. When business is brisk, and gold is not demanded for export, the Treasury may disburse legal-tender notes without any coin redemption being demanded. Its stock of gold will then accumulate. When gold is wanted more than notes, the latter will be presented for redemption. We shall probably not be far from the truth in estimating that the sum total of legal-tender notes presented by individuals for redemption within the first year would range between fifty and one hundred and twenty millions. The stock of coin on hand and the surplus gold revenue would probably suffice to meet this demand, and, if it did not, the amount of bonds to be issued in order to meet all demands of this class would not be very great.

The most important conclusion to be drawn from the principles of currency alluded to is this: if there were no National Bank notes in circulation, specie payments might have been resumed long ago without any difficulty at all, because the legal-tender notes would all have been absorbed in the business of the country without sensible depreciation. There was no financial measure of the government during the war more completely indefensible on any sound basis than that of allowing private corporations to issue three hundred millions of paper money at the very time when the government had already been obliged to issue such quantities that its value had depreciated one half. One irredeemable currency would have been bad enough; two, the one floating on the other, are now far worse than either would have been alone. Had the banks been allowed to issue currency when they pleased, subject however to the

requirement of redeeming it in coin on demand, the measure would not have been so open to criticism. We say this, not to lament the past, but to enter our protest for the future against any power whatever, and especially private corporations such as the banks, being allowed to issue any more currency which they are not bound to redeem in coin, and to call attention to the fact that, if the diminution of circulating notes, in a restoration of specie payments, could all be made to fall on the bank-notes, there would hardly be any need of the government having to redeem any legal-tender notes for private individuals. It is hardly worth while to call attention to any especial way of doing this, because it may be regarded as politically impracticable. In any contest between the interests of the public and those of the banks, it may be safely assumed that, in the present state of affairs, the former will go to the wall.

In the preceding discussion we have considered only that portion of the legal-tender notes kept in circulation by individuals, or procured by them for the purpose of being converted into coin. We have now to consider the $115,000,000 held by the banks as part of their twenty-five per cent of legal reserve against circulation and deposits. If the government offers to pay these notes in specie on demand, without any restriction or any alteration of its policy toward the banks, the latter must be expected at once to exchange their legal-tender reserve for specie. This would at once throw a demand upon the Treasury which it would be entirely unable to meet. We may therefore regard it as an essential feature of any plan of resumption, that it shall include some provision which shall make it for the interest of the banks to keep their reserves in the form of legal tenders, rather than to demand their exchange into coin.

With these considerations before us, we are in a position to examine intelligently the bill for the restoration of the currency reported to the Senate by Mr. Sherman from the Committee of Finance. The original bill was introduced by Mr. Buckingham, and we regret not having space to print it in full, with notes on each sentence, as a curiosity of legislation. It did not contain a provision which was not either mischievous, ineffective, or of doubtful or impossible construction, and its passage, even if the Executive could have made up his mind what

it required him to do, would have put specie payments further off than they are now. As reported back by Mr. Sherman, it was hardly recognizable, being shorn of its objectionable features, and so worded that the reader could judge what it meant. The first section, and indeed the only one which received intelligent consideration in the debate, made two very important changes in the National Banking system. The amount of circulation which the banks might issue was no longer restricted, and, so long as they redeemed their notes in legal tender whenever demanded, they were no longer required to keep a definite legal-tender reserve.

In a normal state of financial affairs, both these measures would be steps in the right direction. Under the present system the banks are prevented from adapting their operations to the wants of business. The great mass of their circulating notes is kept out at all times, and when more are wanted no more can be had. The banks always have plenty of accommodation when no one wants it, because their reserves then increase. They lower their rate of interest so as to keep the reserves down very nearly to the legal limit, so that when a call is made upon those reserves, they are immediately debarred from giving further accommodation.

Unfortunately, however, financial affairs are not in their normal state. In such a state all the National Bank circulation would be redeemable in coin. As matters actually stand, it is practically irredeemable; for the system of redemption in irredeemable paper, which we now have, is like anchoring a vessel at sea by fastening her to a large ship which is herself drifting unanchored. Both may go to ruin together. Redemption in coin, or something else having absolute value independent of the needs of the money market, is all that can, in the absence of restriction, prevent the banks from expanding indefinitely. Every bank can find borrowers for all the notes it can issue, and there is no serious danger of their coming back for redemption, because a legal-tender note now serves no purpose which a bank-note would not serve equally well.

The result of the proposed legislation would therefore have been, that whenever the government commenced to redeem its notes they would all have been presented for redemption,

whether held by individuals or the banks. Those held by the banks would have been presented because, as we have already remarked, coin would have been more scarce than notes, and no inducement, direct or indirect, would be held out to induce a preference for notes. Those held by individuals would have come in because driven in by the now unlimited issue of bank-notes. It was, no doubt, in view of the difficulties which might thus arise that Mr. Sherman's bill, instead of providing for specie payment of the greenbacks, provided for their conversion into specie or five-per-cent bonds at the option of the Treasurer of the United States. Such options constitute one of the bad features of our legislation, and there was nothing in the law to prevent his furnishing the more valuable of the two to such persons or institutions as he wished to favor, while paying the less valuable to others. We suppose, however, that the understanding was that the least valuable should always be paid, and in this case the redemption would probably be made in bonds alone for some time to come. Under the law as it now stands, these bonds could not be used by the banks as reserve, and they would therefore be obliged to keep their legal-tender notes until the Treasury actually commenced redeeming in coin.

In favor of this system of redemption in interest-bearing bonds many sound arguments can be urged. The strongest objection to it is that it would be too much at the mercy of politics and too much affected by the state of the government credit, and this objection is serious enough to render its permanent adoption unadvisable. But it would be as much better than our present system as a poor security is better than none at all; and the conditions of its successful adoption are therefore worth inquiring into. The first and most necessary condition is, that the bonds shall bear sufficient interest to make them worth par in gold, because otherwise the currency based on them will inevitably depreciate. To attain this end the interest must be as much as five per cent. A lower rate may indeed answer a temporary purpose, if the amount of bonds issued is very small; but if made the sole basis of the currency, the depreciation will be nearly proportional to the amount by which the interest falls short of this rate. For instance, if the rate were only $3\frac{65}{100}$ per cent, the bonds would only be worth from seventy to eighty

cents on the dollar, unless the principal were payable in coin at a not distant day. In other words, the premium on gold might rise to thirty or forty per cent without being checked by the conversion of notes into bonds bearing $3\frac{65}{100}$ interest.

Every plan for restoring the currency must give rise to so much discussion of minute details, the arrangement of which is triply complicated by the complexities of our National Banking system; and the interests to be provided for, or which will insist on being provided for, are so numerous and conflicting that we may well despair of anything effective being done until some higher view than that of merely regulating the currency is taken. Such a ground is afforded by the necessities of the national credit and the national honor. The legal-tender notes were issued ten years ago on the credit of the nation. The understanding was that they would be paid or converted into interest-bearing bonds worth par as soon as the emergency under which they were issued had passed. On each note the United States promises to pay the bearer the amount named on its face. What does this promise mean? This is a question which every voter in the land should ask himself, and, after careful reflection, try to answer. Is the government under any obligation to keep this promise? If it is, it is violating its faith every day it neglects to fulfil it. If it is not, the promises of our government do not mean anything,—a fact which the quicker the world finds out, the better it will be.

Two answers may be made to these questions. One is that the government is not bound to any specified time of payment, and therefore need only pay when it pleases. This is the same thing as saying that it will never pay at all. For it is always more convenient to defer payment till next year than to make it now; and if a time when the government is bound to pay is never to come, all talk about payment may as well be abandoned. A note payable without interest in one hundred years is worth very little, but payable only at the pleasure of the drawer it is worth much less, no matter how sound the drawer may be.

This question of payment of the public obligations expressed in the legal-tender notes is one which should be energetically taken up by the friends of the public credit. We should no

longer allow ourselves or our opponents to close the eyes to the true state of the case. No denunciation on the one hand nor apologetic phrases on the other will cover up or change the fact that the legal-tender notes are either dishonored obligations of the government or mere pieces of waste paper, according as the promise to pay expressed on their face does or does not bind the government to fulfil it.

If we take the ground that the government is bound to tender payment for these notes without further delay, — and, as we have just shown, there is no middle ground between this and the ground that the promises of our government mean nothing and imply no obligation, — then no question of supposed expediency should be allowed to make us hesitate. In fact, however, the argument of expediency is wholly on the side of payment. The dangers to which the finances of the whole country are exposed by the present system, though entirely overlooked, are of the gravest character, while those feared by the opponents of specie payments are almost entirely imaginary. A fear of imaginary dangers, with a corresponding disregard of real ones, is indeed a common characteristic of imperfect knowledge under all circumstances. First among the imaginary dangers stands the fear that any cause which diminishes the number of dollars in circulation will be productive of disaster to the moneyed interests through a deficiency in the volume of the circulating medium. To show fully the entire groundlessness of this fear would require a consideration of the whole subject of money and exchange; we shall therefore only indicate briefly two reasons, one founded on the nature of the case, the other on experience.

If the question were one of "contraction" pure and simple, that is, contraction without reference to the wants of business, and without any corresponding appreciation of the dollar, except what might be forced by the contraction itself, the fear in question, though without sufficient foundation, would not be devoid of plausibility. But the simple offer of the government to pay coin or interest-bearing bonds for its legal-tender notes will not necessitate the withdrawal of a dollar of these notes from circulation. If any notes come in for redemption, it will not be because the holders are forced to bring them in, but

because there is no use for them in business so profitable as that of the gold or bonds in which they are redeemable. Our calculation that one hundred millions, more or less, would come in for redemption, is founded on the probability that fewer of the appreciated dollars would be necessary to transact the business of the country. Should such not be the case, then none will come in.

The great advantage of specie payment, if the government will solemnly pledge itself to it, over enforced contraction, lies in this: that in the former case every one will know exactly what is coming, and business and prices will adjust themselves in advance to the new order of things, without shock, difficulty, or uncertainty; while in the latter case the future value of the currency will be as uncertain as ever. The effect of the former policy would probably be to ease the money market, that of the latter to tighten it.

As a fact of experience we may say that no one has ever brought to light an instance of any community being for any length of time without a sufficient supply of circulating medium to effect all its exchanges, for the simple reason that no definite quantity of such a medium is necessary for this purpose. A circulation of a thousand million cents could be made to effect all our domestic exchanges just as well as one of a thousand million dollars, and one of ten times the latter amount would effect them no better. Indeed, an irredeemable currency exhibits the remarkable property of becoming scarcer for the borrower the more of it is issued, so that every issue is followed by a stronger demand for more. Prices then go up faster than the volume of currency increases; every one who borrows hopes to pay in money still more depreciated by further issues, and the apparent rise in values fosters speculation, to carry on which requires more and more money.

While men thus allow themselves to hesitate before dangers which are purely imaginary, one of the gravest dangers that ever threatened the prosperity of a wealthy nation stares us in the face. It is one so difficult of comprehension when nakedly stated, that we shall have to employ an analogy. If a man should purchase the title to a farm in the West, for the support of himself in his old age, or that of his children after his

death, he would want some assurance as to the size of the farm. If a considerable portion of the wealth of a community was invested in such title-deeds, knowledge of the quantity of land really bargained for would be of public importance. If it should be found that they had made the investments without this knowledge; if their deeds assured them of nothing but "one farm," without any specification of the size of it; if the latter was to be determined in the future, partly by legislation and partly by accident, and might be one acre just as well as a hundred, — we should wonder at their folly in so investing the funds which were destined for the future use of their families. Now, the place filled by the word "farm" in these deeds is precisely that filled by the equally vague word "dollar" in nearly all the moneyed associations of the country. A life-insurance policy, for instance, only entitles the heirs of the owner to a certain number of "dollars." It gives no assurance whatever of the real value of the dollars he is to receive, these being entirely at the mercy of Congress. If specie payments are resumed and adhered to, the dollar will have a definite value equal to that of twenty-three grains of gold. If this total volume of the currency is confined to its present limits, and the present restrictions upon bank deposits are kept up, there is no serious danger of a depreciation of the dollar below sixty or seventy per cent of its present value. If all restrictions upon the issues of currency and on bank expansion are thrown off, we have no assurance that the dollar of thirty years hence will have the purchasing power that the cent has now. Whenever irredeemable paper dollars are allowed to be issued, there will always be a demand for more, and the temptation to increase their number becomes stronger and stronger. If this temptation is yielded to, the number of dollars will go on increasing until they will be as plenty in every one's pocket as nickels are now, and small services will be paid for in ten-dollar bills, as they are now in ten-cent notes. This change need not seriously interfere with the transaction of current business, because, as we have already remarked, the exchanges of the country can be effected equally well with a given number of eagles, dollars, or cents. The sufferers would be the bond-holder, who would find that the principal of his

hundred-dollar bond would only buy him ten soda-water tickets, and the heirs of members of life-insurance companies, who would find that a year's interest on their policies, instead of keeping them from want, would not buy a barrel of flour.

Under our present system we not only have no guaranty against this state of things happening, but several causes conspire to bring it about. In the first place, all that class who have to pay the dollars have a direct interest in bringing it about, and that class includes nearly all the influential financial managers. For instance, if the men who build a railroad on borrowed money can get the dollar reduced to one half its absolute value, they are thus relieved from half their debt. The men who employ the money of others in this and other ways, though not the most numerous class, are generally those able to wield most political power, including as they do the greater part of the business ability of the country. The class of investors, though far more numerous, and hence able to crush their creditors if they only knew how to do it, are prevented both by apathy and lack of business ability from organizing any efficient plan of resistance. Indeed, the policy of depreciation will be for the most part a popular one, because there is a corresponding nominal rise in the value of every kind of property, except bonds or other forms of indebtedness; and as there is no nominal depreciation in these, nobody is dissatisfied unless he has the acuteness to see through the cheat which is practised. The policy is destructive to national wealth for the same reason that it is popular. The imaginary increase of wealth which is so fascinating and the enormous sums to be made by speculation discourage further production and encourage extravagance, until the inevitable bursting of the bubble shows the true state of affairs. Then men mourn the loss of their imaginary wealth, which they believe to have been suddenly swept away by a financial cataclysm; while the fact is, that the real wealth of the country was going to waste during the whole period of depreciating paper money, its loss being concealed by the constantly diminishing value of the dollar by which all was measured.

Such is the danger which continually threatens us so long as the present state of things continues, and against which it is

the bounden duty of all to call on Congress for protection. No measure can be too radical for the situation. The absolute repeal of the legal-tender law, with a withdrawal by the government of all pretence of making its irredeemable notes money, would be far better than following, as we now are, in the track of Russia, Austria, revolutionary France, and revolutionary America. At the same time, the danger may be greatly diminished without adopting any radical measure. If the government will not allow the issue of any more bank-notes, except on the condition that they shall be payable in coin on demand, and will, at the same time, make provision for honoring its own notes, the financial situation will be greatly strengthened. To do this in a way which, though imperfect, will answer the purpose, is very easy. Assuming that five-per-cent bonds, principal and interest payable in gold, will continue to be worth nearly par in gold, it is only necessary to provide that all holders of legal tender shall be entitled to exchange them for five-per-cent gold bonds after a date to be fixed. As the bonds may bear a premium, even in coin, it may be advisable to adopt that feature of Mr. Sherman's bill which leaves it optional with the Treasurer to redeem in bonds or coin. To allay the fears of those who think the notes may be wanted for the purpose of currency, it may be provided that all the notes thus received shall be kept in the Treasury as a reserve fund, to be paid out again in exchange for the bonds, whenever holders of the latter shall desire to part with them at a small discount, say one or two per cent.

We simply indicate this course as a perfectly safe first step, against which no sound objection can be urged. It is not worth while to enter into a detailed discussion of any plan at present, because the great want is not a plan but a determination to reach the end sought. Indifference to the latter is at the bottom of all the difficulty in deciding on any mode of reaching it. Let Congress and the public once waken to a sense of the national dishonor involved in allowing the promissory notes of the government to stand year after year without any provision at all being made to honor them, and to the danger of the system under which nearly all the bond-holders and life-insurance companies of the country will be compelled to accept these or

any other notes which any future Congress may see fit to authorize in payment of their claims, and the work of providing a remedy will prove very easy. And until a sense of the exigency of the case is reached, no arrangement of plans for restoring specie payment can be expected to receive any effective support.

Art. VII. — CRITICAL NOTICES.

1. — *Miscellaneous and Posthumous Works of* Henry Thomas Buckle. Edited, with a Biographical Notice, by Helen Taylor. In Three Volumes. London: Longmans, Green, & Co. 8vo. 1872.

Buckle's History of Philosophy, unfinished as it is, certainly marks an epoch in historical literature. It was the first attempt, on a considerable scale, to apply to the concrete treatment of historical phenomena the laws that govern these phenomena, and by this means to bring history into the category of the exact sciences. Perhaps there is no one of these laws of which Buckle can be called, in any true sense of the word, the discoverer; although his demonstration of many of them is acute and exhaustive. His peculiar merit is that he brought them over, so to speak, from the domain of abstract philosophy into that of literature, and that he did this with a remarkable breadth and boldness of thought, and in so agreeable and lucid a style as to attract and hold attention. He was fortunate, too, in the time of bringing his book before the public, — when the community, having become accustomed to the scientific treatment of phenomena, and in a certain degree imbued with the scientific spirit, was ready to see this treatment applied to the facts of human experience. It only needed something for its opinions to crystallize about. The extraordinary sensation created by this book is therefore fully justified by the effects which we may fairly ascribe to it. Those views of the uniformity of law, the irresistible tendency of general causes, and the importance of physical geography in human development, which had before been confined to a few advanced thinkers, now passed into the public mind, and powerfully influenced even those who refused to believe in a *science* of history. As accepted principles of historical investigation, they may be said to date from the appearance of this work.

The publication of Mr. Buckle's lesser writings, — most of which have never seen the light before, — and of the materials that he had

been collecting for the purposes of his great undertaking, will be welcome, not only to his special admirers, but to all who are interested in historical study. The complete papers here given are in Mr. Buckle's most finished style, and contain discussions of permanent value. All of these three thick volumes, however, except a part of the first, are taken up with the miscellaneous materials — fragments and commonplace books — which he had been many years accumulating, and which will be found useful by all who desire to make a special study of any topic which came within Mr. Buckle's scope. We will especially instance the history of mediæval literature. But this publication has a further value in illustrating his methods of work, and enabling us to form a better judgment, both of what he actually accomplished and of what he probably would have accomplished if he had lived. In reading his history, the first impression is of an erudition at once so wide and so minute as to show that there was nothing contracted in his sympathies or the range of his inquiries. In these fragments and notes we are brought directly face to face with his materials, and are in a condition to judge fairly whether there were any such limitations.

In the first place, it will be noticed that Mr. Buckle was a great reader, but not a scholar. It ought not to be expected that a book which deals with the philosophy of results rather than with the investigation of details should exhibit special scholarship in every field, or perhaps even in any one. The peculiar requisite for such a task as this is the power of judging accurately of the special labors of others; one need not himself perform these special labors. Still it is probable that no person can judge accurately of the special labors of others, unless he has himself done similar work in some one department; to deal satisfactorily with general results, one must know from one's own experience how such results are reached. Now here, we imagine, is where a University education would have stood Mr. Buckle in stead. He appears never to have engaged in the special investigation of details, but to have reserved himself for the higher work of reasoning from these details. Consequently, the first and most fatal defect in his reasoning is the inadequacy of his materials; not in amount, of course, but in character. It has been pointed out, we believe, by adepts in the natural sciences, that the treatment of these subjects is often unsatisfactory from lack of special knowledge. This is no less true of special historical erudition, in which at least it might be expected that he would be strong.

Nothing is so striking, on glancing over these pages, as the very second-rate character of many of the books read and cited. We do not forget that these commonplace books were made fifteen or twenty years ago, and that many books which were authority then are so no

longer; but this does not account for the whole deficiency. For example: in 1856 a paper appeared in England which has completely revolutionized the science of mythology. Mr. Buckle died in 1862; but, although there are several extracts here upon mythological subjects, Max Müller is not even mentioned; Mr. Prichard is the principal authority upon this head, and the profound treatises of K. O. Müller, Gerhard, Preller, Hartung, and others appear never to have attracted Mr. Buckle's attention. In like manner Prichard is his authority for ancient Egypt; genuine Egyptologists, like Lepsius and Brugsch, he takes no notice of. Now nothing is more certain than that if a person is not himself a special student and authority upon the subjects of which he writes, he must at any rate know how to find and use those who are authorities.

Real scholarship — a Cambridge or Oxford training — would have saved Mr. Buckle from the wasted labor of copying out pages of worthless matter into these note-books, either facts that every scholar ought to be supposed to know, as the derivation of *Ostracism* (No. 220), or puerile derivations, such as that of *Paris* (No. 81). It is incredible that an historical student should take pains to note down the absurd derivation "from the son of Priam, king of Troy," when the transformation of the name of an ancient tribe into a modern city is so common and well-understood an occurrence as to be almost a rule: Treveri into *Treves*, Turones into *Tours*, Remi into *Rheims*, Parisii into *Paris*. It is, by the way, remarkable how very little use Mr. Buckle makes of any but English and French writers; he read, we are told, half a dozen languages, but we find very few traces of them in these "Commonplace Books."

So much for the character of the materials. As regards their scope, there are two or three wide fields of inquiry directly connected with his subject, in which he appears to have taken no interest. *Institutions*, for instance, he hardly notices; nor that wide class of subjects which Mr. Maine's and Mr. Tylor's books have made familiar to English readers. To be sure, both of these have written since Mr. Buckle; but the subject of primitive thought and customs, it would seem, could not fail to engage the attention of a philosophic student of civilization more than we find traces of here. We have already spoken of mythology, — a branch of this subject which was well developed in his lifetime, but on which we find only a very few notes of very little value.

This leads us to the limits to which Mr. Buckle, unconsciously, no doubt, confined himself, and within which he did excellent service. By a history of civilization he meant a history of modern society. He

took society as he found it in the sixteenth century, with very little and very inadequate study of the causes that brought it to that state. Starting from this, he followed out its development in the three centuries of modern history with remarkable power of analysis and breadth of view. Broad as it was, however, his view was not quite complete. Institutions, as we have said, possessed little interest for him. The entire range of events to which history usually confines itself too much he sedulously neglects, and flies into the opposite extreme of underrating their importance. But surely courts and camps, organized institutions and formal statutes, although they are not the sole objects worthy of attention, as our ancestors thought, are yet a part of society, and a very potent part.

This one-sidedness, a reaction from the one-sidedness of earlier historians, is manifested especially in two directions, — in insisting overmuch upon the influence of general tendencies, to the exclusion of special and personal agencies; and in the exaggerated importance ascribed to physical as contrasted with moral and intellectual considerations. It is not that Mr. Buckle consciously ignored either personal agencies or moral considerations; he insists as strongly as one could wish upon the practical superiority of the higher part of man's nature; and again, no small part of his work — and perhaps the most generally interesting — is devoted to an admirable analysis of the character and abilities of distinguished men, and the determination of the amount and kind of influence that they exerted. Nowhere does there exist a finer and more generous tribute to John Stuart Mill than in the review of his "Liberty," in the first of these three volumes. Nevertheless, Mr. Buckle is perhaps the foremost advocate of the theory that history is subject to laws as rigid as those which govern physical phenomena, and that the ablest man is impotent against the great movements of the race. Undoubtedly we must admit in the abstract that these human, intellectual influences are ultimately subject to law; but among these influences is that mighty power which we call, whether rightly or not, *Free Will*, — a fact which we cannot go behind, and the influence of which in human development has been incalculable. Perhaps the time will come when this, too, will be sifted and analyzed, and every event of history shown to be produced by the operation of exact laws; but at present all that we can say is, that at various epochs in the world's history there has appeared among mankind an exceptional nature, which has excited an extraordinary influence upon its generation, and thus upon all future time. It is merely begging the question to say that these heroes of history appeared when the world was ripe for them, and that if they had not done the work somebody else would. There is no

more fallacious belief than that the man will come when the need is; the truth is — and it is one of the saddest truths of human history — that it is very seldom the Luther, Washington, or William the Silent appears when he is wanted. Mr. Buckle says, "Whoever is accustomed to generalize, smiles within himself when he hears that Luther brought about the Reformation; . . . . that William III. saved our liberties, etc." It certainly seems to us, looking back now, that even without Luther the advance of human thought would have forced the Reformation; but, so far as we can see, circumstances were ripe for reform a hundred years before, and even in the sixteenth century any reformer of less vigorous genius than Luther must have met the fate of Huss. Even as it is, the advance of human thought was effectively crushed in Italy and Spain. Again, how do we know that the coalition that expelled James II. in 1688 could have held together a day but for the one man, William of Orange? Mr. Buckle's words would seem to mean that any nation that needs liberty will be sure to have it.

On the other point Mr. Buckle admits in theory the superiority of moral influences, but uses expressions strangely inconsistent with it, when it comes to the special case. "It may be broadly laid down that neither in the sixteenth century nor at any other period has any great revolution been permanently effected except with the view of remedying some palpable and physical evils" (Vol. I. p. 106). And more positively, "The history of the world shows that there has never been a revolution except when the people were groaning under the burden of taxation" (Vol. III. p. 633). Now Mr. Buckle did not really mean this, for he knew perfectly well that some of the greatest revolutions of history were wrought under the influence of religious excitement; and that, under this excitement, a community will submit to any physical suffering and deprivation without a word of complaint. But, while he knew and admitted this truth, his temper and turn of thought led his mind to dwell almost exclusively on physical causes. We find, too, in these passages, an illustration of an occasional habit of overstatement, which is, perhaps, his only fault of style. When he wishes to present a point very strongly, he permits himself hard and exaggerated expressions, which fit the mood he is then in, but which do not represent his real opinions. When, without qualification, he calls Mr. Justice Coleridge "an unjust and unrighteous judge," and dwells upon his "cold heart and shallow understanding" (Vol. I. pp. 60 and 62), he repeats precisely the fallacy that the Abolitionists were guilty of when they denied that a slaveholder could have any virtues. Nor would he in any other connection have said of Irenæus, Tertullian, and Cyprian that their "antiquity was the only possible claim they could

have to respect" (id. p. 189); nor have called the great cathedrals of Europe "trifles" (id. p. 110).

In short, Mr. Buckle is an intolerant writer. He starts dogmatically from the position of a democrat and secularist of the nineteenth century, — a position with which we have no fault to find, — and relentlessly applies the standard of this position to earlier times. Now it is perfectly legitimate, in a history of civilization, that a writer should emphasize with sympathy whatever in an earlier age was working towards the result which appears to him right and desirable; and, on the other hand, should point out facts which are unfavorable in this regard. But to do this well, one must be able to appreciate and sympathize intellectually with opinions and tempers with which one does not agree; and this Mr. Buckle cannot do. For instance, in the fragment on Queen Elizabeth, he has scraped together whatever he could find in disparagement of the clergy of that time, till one might believe there was not a particle of virtue or ability among them, which is what Mr. Buckle would have been glad to believe. Again, it is a very superficial explanation of the Dark Ages to say that they were caused by the Christians shutting up the schools of Greece (Vol. I. p. 170), and the remark displays a judgment as blind to the real good wrought by the Church of that age as it is unjust in holding it responsible for evil.

By reason of the deficiencies here pointed out, we doubt whether Mr. Buckle, even if he had lived, would have written *the* history of civilization in England. The fragment that he published is of great and permanent value as an exhaustive discussion of certain aspects of human progress, the bearings of which upon the general history of mankind had never until then been thoroughly analyzed. Perhaps this fragment contains the principal general philosophy of the subject; although the detailed application of his theories would have possessed great value, and we as a people shall never cease to lament that he could not carry out his purpose of living among us long enough to subject our institutions and national tendencies to his masterly analysis. From a very different point of view from De Tocqueville's, he would have reached conclusions probably no less acute and instructive.

It may be worth while to quote a fine passage in which the doctrine is laid down, which, as we have said, he did not always recognize in practice: "In England, physical science not only *drew off* men from history, but gave them a *wrong pattern* to write it by. They said that in physics external and visible phenomena were everything, and they fancied the same held good in history. They did not know that the most important facts in history are invisible. The external world is

governed by *acts*, the internal world by opinions. In physics actions produce their effects, whether they are known or not; in history they only produce their effects *if* they are known. Every great historical revolution has been preceded by a corresponding intellectual revolution" (Vol. I. p. 213). On page 119 we find a very neat expression of his habit of thought: "The rebellion of the Stuarts against the authority of the nation."

The Biographical Notice contains a very interesting account of Mr. Buckle's life and habits. The intellectual habits that produced so powerful a book and so remarkable a style deserve the careful study of all readers. We will only add that Messrs. Scribner, Welford, and Armstrong have imported a special edition of this work, in recognition of the profound impression made in this country by the History of Civilization.

---

2. — *The Issues of American Politics. A Discussion of the Principal Questions incident to the Governmental Polity of the United States, embracing the Subjects of Amnesty, Force Legislation, Civil Service, Suffrage, The Centralization of Power, Our Money and Currency, The Public Debt, The National Banking System, Reconstruction, The Constitutional Amendments, Tariffs, Taxation, Protection and Free-Trade, and other important Topics. An Exhaustive Treatise upon American Politics.* By Orrin Skinner (of the New York Bar). Philadelphia: J. B. Lippincott & Co. 1873.

Mr. Skinner's ambitious title-page is perhaps a sufficient criticism of his work, for it will give the reader as good an idea of the book and of the author's characteristics as anything we can write. His confidence that in a single volume of five or six hundred pages he has exhausted the science of government, indicates certainly a sanguine temperament, but hardly a proper appreciation of his subject, and possibly excuses our suspicion that he has not yet reached that period of life among whose chief advantages, according to the Rev. Homer Wilbur, is this: "That we attach a less inordinate value to our own productions, and, distrusting daily more and more our own wisdom (with the conceit whereof at twenty we wrap ourselves away from knowledge as with a garment), do reconcile ourselves with the wisdom of God." He tells us that his book was suggested by the fact that within the last twenty-five years "American literature in a *single* work has not attempted to solve the issues of American politics," and that it was written to supply this deficiency. Did it never occur to him that no one man can "solve" those issues, and that of the able men who in

all ages and countries have considered the problems of government, he is the first who has undertaken to leave no room for further discussion? Perhaps "American literature" was less in fault than he fancied.

We will not say that a book no larger than Mr. Skinner's might not be written which would throw much light upon our political difficulties, but we will say that upon his plan it would be impossible. He has made a list of questions decided and to be decided, has discussed each more or less at length, and has announced his own conclusions, which are generally what we are taught to consider orthodox. He believes in specie payments, amnesty, civil-service reform, intelligent suffrage, and a protective tariff, and he supports his belief by arguments which have stood the test of time and have lost nothing but their freshness. He sees the evils which exist and thinks they should be cured, but he has not the insight which enables the statesman to distinguish which is the disease and which the symptom.

To discuss the questions which our author has assumed to exhaust requires, in the first place, such an acquaintance with history as will enable the student to understand what difficulties have presented themselves to the nations which have preceded us, what expedients were devised to meet them, whether they succeeded or failed and why. This is necessary, that he may learn to distinguish between the vices inherent in human nature and the vices which belong to particular systems of government. Certain causes have always produced the same effects; certain tendencies of mankind must be met and controlled by any government; and he who would deal with politics must know what those tendencies are, if he would not attribute to a system ills which are the inheritance of the race. Otherwise, he is likely to fall into the error of those who fancy that the abuses and follies of their day have never been known before in the world's history, and are directly attributable to the infamous conduct of the party in power. A study of history teaches that nothing in the way of sin or folly is new under the sun; that the world even in the palmy days of our ancestors was just as bad as it is to-day, and that it will probably continue in its career of wickedness till human nature is changed or "developed," — an effect which no form of human government has yet been able to produce.

In the second place, there is needed a familiarity with the history of our own country which very few possess; that what the student has learned from the history of other peoples may be modified properly when he seeks to apply it in dealing with a nation whose character and whose traditions present conditions so peculiar and so different from those under which the problems of government have hitherto been

discussed. And, in the last place, our present position must be studied most carefully. We are not called upon to govern a homogeneous race of like interests and like prejudices. The statesman who would reform a system must consider not only what is desirable, but what is possible; and in our case he must estimate the force of a thousand currents of influence; he must encounter and control the prejudices of race, of color, of religion, of locality, of social position, and work his way forward inch by inch. The conditions of successful government are more complex here than elsewhere, for the vast extent of our territory and the variety of our interests afford more chance for discussion, while the absence of any powerful enemy on our borders removes that motive for union to which the governments of Europe have so often appealed successfully, and for which our only substitute is the good sense of the people. There is scarcely a question that to-day agitates the various nations of Europe which in one form or another does not now or will not soon demand attention from us; while we have some peculiar to ourselves. When we consider the infinite perplexities to which these questions must give rise, and remember the Chancellor Oxenstiern's *Vide, mi fili, quam parva sapientia regitur mundus*, we can almost forgive those prophets of plagues who see in our future nothing but disaster: with whom, however, we have the least possible sympathy. That the nation will continue to exist and to prosper, and that a remedy for the evils of to-day will be found, we do not in the least doubt. The troubles which threatened to overwhelm our ancestors seem trifles to us; our mountains will be molehills to our children, and they in their turn will have abuses to correct. Evils are sent into the world for us to fight against, not to cry about, and the more serious they seem, the harder fight we must make.

In view, however, of the difficulties which we must encounter, and the wisdom which our rulers must have if they are to deal with them successfully, it behooves us to consider whether our present method of selecting those rulers brings forward the proper men. We need in places of trust the best intellect, the most thorough education, the most unyielding honesty, the strongest sense of duty; and that, with a few exceptions, our public men do not possess these qualifications, the last winter in Congress, and the scandals which make us blush daily, have convinced all thinking men. It is obvious that until we get a Congress and an Executive who will be governed in the determination of public questions by considerations of public rather than of personal or party interest, it is vain to bring these questions forward for discussion; and therefore it is that the issues of American politics are to-day reduced to one, and that, the question how we shall reorganize our system of

selecting representatives in such a way as to secure at least a fair representation of each constituency, if not a choice from its best men. Our troubles arise in great part from the difficulty of adapting a representative system to large constituencies. That which was easy in the town-meeting epoch of our history has become difficult. When the constituent body attains the size which it has with us, when it embraces men of associations and pursuits the most dissimilar, so that mutual acquaintance and personal conference among its members are impossible, it is clear that before an election for a representative can be had, some method of preliminary consultation must be devised to unite those of the same opinion, that there may not be as many candidates as there are voters. The plan which we have adopted to accomplish this result, that of caucus and convention, is liable to the gravest objections. In theory it is excellent, for it simply extends the representative system by subdividing the constituent body, and getting the opinion of each fragment through its representative chosen to express it; but in its practical working it has so far been perverted that, instead of being used to ascertain the wishes of the constituency, it is employed almost always to direct, and often to defeat them; and this abuse is the root of many evils.

In the first place, our politicians are organized and disciplined like an army, with the rules of Freemasons. The influence of the President can be felt down through the various grades of officials to the ward-room wire-puller who is charged with the manipulation of the primary meeting. Each superior relies upon his next inferior for help in retaining his position or securing promotion, and each inferior who has organized the conventions of a district or State in that superior's interest expects fitting reward for his services. That each officer may have the means of giving this reward, the offices of the government have been apportioned, and each rank in the political army receives its share. A public sentiment has grown up which permits, if it does not approve, the use of patronage to keep men and parties in power, which allows public employment to be made the reward of political service, and which sees without disgust the people's servants, in the struggle for preferment, postpone the public interest to their own, and treat their offices as a means of securing their own advancement rather than as a trust to be administered for the general good. In consequence, the whole government is conducted on a gigantic system of bribery. Within a single year we have seen a bold and almost successful attempt to carry the State of Massachusetts in favor of a gubernatorial candidate when a large majority of the party which that candidate sought to lead was bitterly opposed to him. We have seen a candidate for the Presidency receive

the unanimous vote of a large convention, whose constituents were as much divided as their so-called representatives were unanimous; and finally, we have seen another convention fairly captured and made to nominate a man for whom scarcely a handful of those whom that convention represented was at first found willing to vote. Yet if General Butler had received the nomination of the Republican Convention, he would have been elected, although the means used to obtain the nomination would have been perfectly understood and generally condemned, even by those whose votes would have elected him. In the second case, although large numbers of the best Republicans were dissatisfied with General Grant, that dissatisfaction could not obtain a single representative in the nominating convention, and no one was found to dispute its decision. In the last case, though all who originated the Cincinnati Convention felt that the nomination of Mr. Greeley was the result of a mere trick, and made their whole movement ridiculous, they bowed to it as to the *fiat* of God.

If these are the results of our method, is it not obvious that it is radically wrong? It is useless to answer, that the abuses spring not from the system itself, but from the willingness of good men to neglect their political duties. True statesmanship deals with men as they are, not as they ought to be. If our method produces bad results from any cause, whether it be from the political apathy of the average voter or from its own inherent defects, it should be abandoned. It is vain to say that we ought to retain it, because it would work admirably in the Society of the Cincinnati. Nor is this the worst of it. While this system is retained, matters must grow steadily worse. The best men will withdraw more and more from politics, since they will not resort to the wire-pulling and corruption used by their opponents, and cannot succeed without them. Public sentiment, already much blunted, will grow more indifferent to abuses, and they will multiply in consequence. When we remember how many respectable people saw nothing to criticise, and even much to approve, in the course of Mr. Ames and his associates last winter; that it was a question in which the country at large took little interest, whether the purchase of a seat in the United States Senate by wholesale bribery should be ratified by the Senate or not; that the United States is represented abroad by General Sickles in the country with which our diplomatic relations are most delicate, and at home by Collector Casey in the State whose domestic affairs most embarrass the government, and though both officers are recognized as discreditable, there is no public opinion strong enough to force their removal or even to prevent the latter's renomination, — we shall be forced to confess that the public conscience needs to be educated; and

if we except a few, we shall look in vain among our public men for proper teachers. Unless we bestir ourselves speedily, the government, which Mr. Lincoln called a "government of the people by the people and for the people," will be supplanted by a government of the people by the politicians and for the politicians. Civil-service reform strikes at the root of this evil, for it takes from those who uphold and profit by the present system the sinews of war. Without the patronage which he now wields, the senator or representative would have no reward to offer for faithful service, and would lose the means of packing caucuses and managing districts. It would take away at once the object for which and the means by which our present rulers seek and obtain office. Without the spoils, what avails it to be victor? And we hope that those who advocate this reform will be content with it in the first instance. In support of it they can unite all honest men, sooner or later. If, however, they endeavor to organize a party which shall at the same time advocate free-trade, or support any measure upon which honest men are divided, they will introduce an element of discord, and will take from their own strength while they give their enemies fresh opportunities to defeat them. Perfection cannot be attained in one campaign.

We have left ourselves little space to discuss Mr. Skinner's book in detail, but we cannot help regretting that, with the multitude of living issues which pressed upon his attention, he should have devoted so much of his time to the question, whether the recent constitutional amendments are constitutional. The proposition that a constitutional amendment is unconstitutional if it amends the Constitution seems hardly worthy even of the qualified support which it receives from him. Nor can we pass without notice the measures by which he proposes to effect a reform in our civil service, though to discuss them in detail would require more space than we can give. The propositions are twelve in number. Some are good, others are fairly debatable, but the most belong to a class of expedients very fascinating to theorists, but which indicate a radical inability on the part of their inventors to comprehend the methods by which men are governed. Such is his proposition that Congressmen should be forbidden by law to recommend candidates for office. This plan was first suggested by Mr. Trumbull, but the bill which he introduced for the purpose was probably intended merely as a peg on which to hang a speech against the abuse of Congressional influence; for we cannot believe that a man of Mr. Trumbull's ability ever seriously advocated it. Our author says that the first objection to it is yet to be raised. We would suggest as one objection that no law could prevent it, unless the President made it his

business to turn state's evidence. Another is, that it is undesirable to prevent the President from consulting the eminent men who ought to be found in Congress as to his appointments, particularly when they must in the majority of cases be made from among men whom he does not know personally, and as to whose qualifications he can only judge by what he is told. If, because Congressmen recommend bad men, we take from them the right to recommend, why not, on the same principle, forbid them to pass laws, because they sometimes pass bad ones? Or if, following this proposition to its logical result, we take from our officers, legislative, executive, and judicial, every power which can be abused, Mr. Skinner must devise some method for governing without power. Indeed, it is rather incumbent on him now to suggest some plan for appointing the forty-eight thousand officials of whom, according to his calculation, our civil service is composed. If the President and secretaries are to act only upon their personal knowledge, they will naturally be confined to the circle of family and friends, appointments from which lately have not met with general approval. If they are to act upon advice, should they pass over the men whom they know, who are accredited to them by the choice of the people, and who are responsible to the people, and consult men whom they do not know, who have no business to advise, and who are not responsible? The question answers itself. But in justice to our author we should say that he meets this difficulty by a plan as simple as original. He would have all officials, except Cabinet ministers, foreign ministers, heads of bureaus, and local officers like postmasters and collectors, apportioned among the several States, according to their voting population; and then in each State a list is to be prepared like a jury list, upon which the name of every voter who can furnish the diploma of a respectable academy is to be enrolled; then three times as many names as there are offices to fill are to be drawn, and from these names the appointing power is to select the required officers, though how the selection is to be made we are not told. The merits of the plan have strongly impressed its author, and to his work we must refer the inquiring reader who seeks to know them. The arguments against it may be reserved till such time as the question of its adoption becomes an issue of American politics. Unable to give Mr. Skinner's whole plan, we have offered these features of it as illustrations of his method. In our judgment he cannot be encouraged to hope for its speedy adoption.

It is impossible, in concluding, to agree with the eminent critic who, we are informed in the publishers' advertisement, has pronounced Mr. Skinner's work "as regards purity of logic and beauty of rhetoric

almost faultless." His use of words, his construction of sentences, and his theoretical flourishes are, to say the least, peculiar. He tells us (and italicises the proposition) that "the magnitude of any enterprise is measured by the versatility of others which surround it, and this last, in a great degree, by immediate territorial area," which is interpreted, if at all, by the next sentence: "Factures of hand or machinery will best flourish by the side of extended agriculture, and *vice versa*." This word "facture" possesses for him a singular charm, and we find "facturing," "facturer," and "factured" constantly repeated. He regrets that in the United States "the simple semblance of honest manhood, however ignorant, is the only fitness required for a full exercise of the suffragan power." This will be new to many who have fancied that other qualifications were considered in the election of our bishops. A minority of voters becomes with him "a suffragan minority," and we are informed that "we cannot universalize the incongruous." We do not remember to have met with a book so filled with absurd misapplications of words. Mr. Skinner tells us that the style of his essays is intended to be "plain, clear, and unostentatious," the subject being such, he continues, "as to preclude all play of the imagination, flights of fancy, or figures of rhetoric." That he is not without rhetorical power, however, he lets the reader see by flights like these: "The exact date, however, of the inauguration of a metallic currency, — of the period when man first summoned the glistening metal from its hiding-place in the inner earth, and by the name of money made it a crystal messenger to lay the foundations of commerce, and thereby wed the human race to the cause of civilization, — slumbers among the mysteries of the unrecorded past." Of the business community we learn that "their entire life in company with that of common humanity is but a game of chance, from the opening door of the cradle to the closing portal of the grave. Mystery envelops their every step, and their very existence is shrouded with uncertainty." Speaking of the voluntary consent by which in a democracy the people obey their rulers, the author says: "It is no insult to Omnipotence to say that the perfection of this compromising ability constitutes the dividing line between human and superhuman effort. It is the conclusive proof that man partakes of the image of his Maker." The time when mankind first began to dig is described as the era when man "by the donation of labor elected himself to a peerage with the forces of nature in persuading a responsive earth to augment its natural products and disseminate its hidden wealth." Similar examples of hazy thought and false rhetoric might be given to an unlimited extent. They annoy the reader on every page, and indicate what everything in the book leads

us to suppose, that it is not the result of careful thought, but a hasty production written to supply a temporary demand.

To do Mr. Skinner justice, however, he does not despair of the Republic, and his influence, so far as it goes, is on the right side. Some parts of his book, as, for example, the chapter on Force Legislation, are valuable, but it cannot be said that he has contributed much toward what he is pleased to term the solution of our political issues.

---

3. — *The Romance of the Harem.* By Mrs. Anna H. Leonowens, Author of "The English Governess at the Siamese Court." Illustrated. Boston: James R. Oogood & Co. 1873.

Our readers will recall Mrs. Leonowens's very entertaining book, "The English Governess at the Siamese Court," in which she gave the public the account of her residence in that remote and generally unknown part of the world, and they will gladly welcome another volume which throws light upon the condition of this singular people before it follows other countries in the adoption of the black coat, high hat, and common law of England. The author's experience was most exceptional, living as she did in the most secluded part of an Eastern despot's home, and possessing over him and the unhappy women of his harem a very great influence, which she seems to have exercised to very good purpose. The condition in which the women lived, their dependence upon the favor of a jaded voluptuary, the suddenness and severity of the laws, all combine to produce the elements of every sort of tragedy; and we find in this volume nothing but the grimmest tales, which throw the inventions of our civilized romancers far into the shade. Most obvious, of course, is the pitiableness of it all, of the misery which the degradation of women surely entails; but there is found a certain relief from this in the many instances Mrs. Leonowens gives us of the simplicity, fidelity, and earnestness which held their own alongside of great corruption. We suppose that to their incomplete civilization is due so much of the singleness and the lack of complexity of their characters; they are, so to speak, more nearly heroic, by which we mean to indicate their difference from the many-sidedness of over or highly civilized people, whose minds are shaped by so many various influences. It is this quality which gives the stories the author has collected their great solemnity; all the incidents have a completeness; they concern the whole lives of the actors in a way that is not so often seen in our lives, with their manifold, varying, interwoven conditions. What, for instance, could be imagined more truly tragic than the first story,

that of Tuptim, the poor girl who, after the fashion of the country, had been brought among other offerings, such as silk, spices, silver and gold, curiosities and valuables of every kind, for the king's acceptance? She was a beautiful girl, but even when she had attracted the attention of the king, she was disobedient and discontented. From Mrs. Leonowens she learned enough to be able to write in English characters the name, "Khoon P'hra Bâlât": this she said was the name of the favorite disciple of Chow Khoon Sah, a high-priest, and that he sometimes preached to them at the palace. A few days later Mrs. Leonowens learns that Tuptim is in prison, and that she is to be tried for escaping from the palace and flying, in male attire, to the young priest whose name she had learned to write. Not only was that in their eyes a terrible crime, but that of which the priest was considered guilty, the breaking of his vows, was thought most monstrous. At the trial Tuptim said: "I know not why, but, when I found myself outside of the palace walls, I went straight to the temple of Rajah Bah ditt Lang, and sat down at the gate. Towards evening, the good priest, Chow Khoon Sah, came out, and, on seeing me, asked why I sat there. I did not know what else to say, and so I begged him to let me be his disciple, and live in his monastery. 'Whose disciple art thou, my child?' he asked. At which I began to cry, for I did not wish to deceive the holy man. Seeing my distress, he turned to P'hra Bâlât, who was following him with other priests, and bade him take me under his charge, and instruct me faithfully in all the doctrines of Buddha. Then P'hra Bâlât took me to his cell, but he did not recognize, in the young priest I seemed to be, the Tuptim he had known in his boyhood, and who had once been his betrothed wife."

"At this part of Tuptim's recital" (Mrs. Leonowens continues) "the women held up their arms in profound astonishment, and the men judges grinned maliciously, displaying their hateful gums, red with the juice of the betel-nut. . . . .

"'P'hra Bâlât, whom you have condemned to torture and to death, has not sinned. He is innocent. The sin is mine, and mine only. I knew that I was a woman, but he did not. If I had known all that he has taught me since I became his disciple, I could not have committed the great sin of which I am accused. I would have tried, indeed and truly I would have tried, to endure my life in the palace, and would not have run away. O lady dear! believe that I am speaking the truth. I grew quiet and happy because I was near him, and he taught me every day, and I can say the whole of the Nava d'harma (Divine Law) by heart. You can ask his other disciples, who were with me, and they will tell you that I was also modest and humble, and we all lay at his

feet by night. Indeed, dear lady, I did not so much want to be his wife after he became a p'hra (priest), but only to be near him.'" Then, after speaking of the way in which she had been arrested, she repeated the assurances of her innocence, but in vain. She is about to be beaten, but, at Mrs. Leonowens's instance, appeal is made to the king's clemency. He is at first gracious, but on that very afternoon she sees the scaffolding put up opposite her windows, on which Bâlât and Tuptim are to be put to torture. Bravely enduring all its horrors, she simply said: "I have not sinned, nor has the priest, my Lord Bâlât, sinned. The sacred Buddh in heaven knows all." The next day they were burned at the stake. A month later, however, the king repented of his severity, and had two monuments erected on the place where these two people suffered, each bearing the inscription, "Suns may set and rise again, but the pure and brave Bâlât and Tuptim will never more return to this earth."

Not all the stories are as terrible as this, although all are solemn. In the story called "The Favorite of the Harem," a poet has a subject ready made to his hand. It will be remembered by those who read it in the "Atlantic Monthly" as an account of the favorite who at the very time she first attracted the king's notice, at a play in which she was acting, fell in love with a young nobleman in the king's suite. Later she corresponded with him, one of her women, named Boon, being the letter-carrier. Finally, however, one of the letters, evidently written to a lover, was detected, and both the women were thrown into prison. Then Choy (the *quondam* favorite) learns from Boon that this lover of hers was her woman's husband, from love for whom she had sacrificed herself and given him all the aid she could in his intrigue with Choy. The next day they are both put to torture to discover the name of the lover. Boon is firm to the end; but Choy, unable to endure its terrors, reveals the name of Boon's husband. He and his wife were sentenced to death, while Choy lived in unceasing remorse.

As a relief to these sad scenes, we have some anecdotes from the school-room. There is one as follows: Some ice having been brought to the king from Singapore, Mrs. Leonowens took advantage of the opportunity to tell her scholars, the women of the harem, about snow; they all were angrily incredulous, and one, Hidden-Perfume, said, "Please do not say that again. I believe you, like my own heart, in everything you have taught me, but this sounds like the story of a little child who wishes to say something more wonderful than anything that was ever said before." This was the same woman who called herself Harriet Beecher Stowe; and of her Mrs. Leonowens gives us a touching account.

We hope that our readers will be able to judge from our extracts of the interest and the rarity of such a book as this "Romance of the Harem." Those who take it up will find it a most impressive volume, one that is by no means merely entertaining. It lifts the veil from what was unknown ground; all who care for more than the commonplaces of many travellers' gossip will be glad to read it.

---

4. — *Literature and Dogma. An Essay towards a better Apprehension of the Bible.* By MATTHEW ARNOLD, D. C. L., formerly Professor of Poetry in the University of Oxford and Fellow of Oriel College. Boston: James R. Osgood & Co. 1873.

THE writings of other than theologians about the Bible have seldom been anything else than either loud-mouthed abuse, which has generally borne its condemnation on its face, or, in later times, the contemptuous utterance of scientific men, who may have been civiller in form, though at heart they have been equally hostile to the book, so that now there is but little chance of unprejudiced hearing for a man who brings a new test to its examination. Theologians and students of science, of course, with numerous exceptions among both classes, are not eminent among men for their desire thoroughly to understand the position of those who criticise them, or patiently to seek a ground of truth on which dissentient opinions may possibly meet. In this respect the Church is at least consistent; it has withstood a great deal in its time, and so need not be too much perturbed at new attacks; and the dogmatism of science, offensive though it be, is a very natural accompaniment of sudden and marvellous success. But if there is nothing miraculous in the faults of human nature, they are all the more to be regretted on that account, and very much more if the result in the case of the book before us should be that contempt is hurled upon so serious and painstaking an attempt to give expression to the sort of thought which lies between theological and scientific dogmatism as is found in Mr. Arnold's essay. It is to be remembered that it nowhere pretends to be an authoritative assertion of absolute truth; it is only an attempt to give utterance to a deep religious feeling, which finds itself repelled by what to many seem too hard formulæ for the hungry heart to receive. Of course the book is strongly flavored with the writer's personality; probably no other man will agree with it thoroughly, nor is it desirable that any one should; but it will be found to express in words a great deal which many had been unconsciously working out in their minds. And a book which does this in a temperate spirit is sure to make a

mark and to leave a name in the history of its time. A violent spirit is apt to do a great deal of mischief which has to be undone later; it is when men are calm that they are strongest in argument, and although there are signs of human emotion in this book, such as the perpetual twitting of the Bishops of Winchester and Gloucester, which to us in this country will doubtless seem uncalled for, it is to be remembered how much more weight those men have in England than is possible for the occupants of similar positions here. Their influence is vast, and hence they become prominent objects of attack. Another charge which has been frequently brought against Mr. Arnold is, that of irreverence in his comparison of the Trinity to three Lords Shaftesbury, and in this we would by no means try to defend him. Notwithstanding the frequent use of this device in controversy, it may be said that it is not by pointing out unessential errors that a book is refuted or that an accurate impression is given of its contents; let us then rather give a brief analysis of this essay which shall convey to the reader the principal positions held by Mr. Arnold.

In the first place, as those who are familiar with his previous writings might have imagined, he utters his usual plea for culture as an important aid in the advancement of the world. Many who do not care to burn school-houses and libraries are continually offended by the lavish use made of this word, or, rather, its abuse. Especially is this true, when, as is often the case, it is an apology for every form of scrappiness in education and accomplishment, when it is taken for granted that any one who has acquired a smattering of many things must thereby be a wiser man than he who has pondered a great deal over a few questions; which is as sensible an opinion to hold as would be one that to wander through the picture-galleries of Europe could make all tourists great artists. Culture can never be more than one of many aids in the growth of the human mind; it is to be desired for the use that may be made of it, but it does not do away with the natural differences between the ability of different minds. As Mr. Arnold uses it in his Preface, it hardly means more than literary method, which he applies to the consideration of the Bible. This may seem a simpler step than a first one in any new direction is apt to be; but that this is done, and done with such fairness, is what makes his book what it is.

He begins with noting the difference between literary and scientific terms as they are employed in the Bible, illustrating his position by the different ways in which the term *God* is understood. "People use it," he says, "as if it stood for a perfectly definite and ascertained idea, from which we might, without more ado, extract propositions and draw inferences, just as we should from any other definite and ascertained

idea. . . . . But, in truth, the word 'God' is used in most cases — not by the Bishops of Winchester and Gloucester, but by mankind in general — as by no means a term of science or exact knowledge, but a term of poetry and eloquence, a term *thrown out*, so to speak, at a not fully grasped object of the speaker's consciousness, — a literary term, in short; and mankind mean different things by it as their consciousness differs." A few pages further on, he says: "The object of religion is *conduct;* and conduct is really, however men may overlay it with philosophical disquisitions, the simplest thing in the world. That is to say, it is the simplest thing in the world as far as understanding is concerned; as regards doing, it is the hardest thing in the world." Further on he says: "It extends to rightness in the whole range of what we call conduct; in three fourths, therefore, at the very lowest computation, of human life. The only doubt is, whether we ought not to make the range of conduct wider still, and to say it is four fifths of human life or five sixths." Among the Jews was found the feeling of the importance of conduct; they had a stronger admiration of righteousness, or, rather, their admiration was less complicated by admiration of other things than was the case with other peoples. Their idea of God, Mr. Arnold says, was as The Eternal, *the not ourselves which makes for righteousness*, and here the question will arise whether he is justified in denying that they held a belief in a personal Deity; but this is a question which cannot be decided by the literary method alone; scholars will also have something to say about it. Later there arose among the Jews a less exalted notion of what their God was going to bring to them; instead of calmly accepting the fact that "righteousness tendeth to life," they looked for some more tangible result as a reward for their right doing; at first it was nothing but a vague, indefinite longing, hardly different from hope, but in time it changed into a belief in material progress.

Then came Christianity with its new message to man, that of the necessity of *personal religion.* Christ "put things in such a way that his hearer was led to take each rule or fact of conduct by its inward side, its effect on the heart and character; then the reason of the thing, the meaning of what had been mere matter of blind rule, flashed upon him. . . . . *To find his own soul*, his true and permanent self, became set up in man's view as his chief concern, as the secret of happiness; and so it really is." Again: "Christ made his followers first look within and examine themselves; he made them feel that they had a best and real self as opposed to their ordinary and apparent one, and that their happiness depended on saving themselves from being overborne. And then, by recommending, and still more by himself exemplifying in his

own practice, by the exhibition in himself, with the most prepossessing pureness, clearness, and beauty, of the two qualities by which our ordinary self is indeed most essentially counteracted, *self-renouncement* and *mildness*, he made his followers feel that in these qualities lay the secret of their best self; that to attain them was in the highest degree requisite and natural, and that a man's happiness depended upon it." In this way "was the great doctrine of the Old Testament, *To righteousness belongs happiness!* made a true and potent word again." In time, however, arose the belief that "the mild, inward, self-renouncing, and sacrificed Servant of the Eternal, the new and better Messiah, was yet, before the present generation passed, to come on the clouds of heaven in power and glory." Since the Advent failed to come then, it was supposed that it would arrive at a later time; "the future and the miraculous engaged the chief attention of Christians; and in accordance with this strain of thought, they more and more rested the proof of Christianity, not on its internal evidence, but on prediction and miracle." Then follow two interesting chapters, one on the proof from prophecy, the other on proof from miracles. From this last chapter we will quote a few lines: —

"That miracles, when fully believed, are felt by men in general to be a source of authority, it is absurd to deny. One may say, indeed: Suppose I could change the pen with which I write this into a pen-wiper, I should not thus make what I write any the truer or more convincing. That may be so in reality, but the mass of mankind feel differently. In the judgment of the mass of mankind, could I visibly and undeniably change the pen with which I write this into a pen-wiper, not only would this which I write acquire a claim to be held pefectly true and convincing, but I should even be entitled to affirm, and to be believed in affirming, propositions the most palpably at war with common fact and experience. It is almost impossible to exaggerate the proneness of the human mind to take miracles as evidence, and to seek for miracles as evidence; or the extent to which religion, and religion of a true and admirable kind, has been, and is still, held in connection with a reliance upon miracles. To pick Scripture miracles one by one to pieces is an odious and repulsive task; it is also an unprofitable one," and Mr. Arnold does not undertake to do it. He contents himself with showing the possibility of error under which those who have given us an account of them labored, and how uncertain is the test which the mind of the believer applies to their examination. To him they are matters of less importance than the other parts of the New Testament. It is interesting to compare his method with that of Strauss and the Tübingen school, in this matter of miracles; Strauss

dissects every account with the utmost care and exactness, as if he were anxious to build an intrenched camp of disbelief, which should forever serve for the protection and comfort of those who did not belong to the camp of orthodox belief, while, in comparison, Mr. Arnold leaves it an open question which is to be settled by the gradual change of opinion in men's minds.

The two chapters which follow, which are entitled, respectively, "The New Testament Record," and "The Testimony of Jesus to himself," are, perhaps, the most interesting in the book. Here the literary method, especially in the hands of so able a man as Mr. Arnold, is particularly useful. There is no call for profound historical or philological study to aid in the treatment of the questions which come up; we have the account of one man, who, it might almost be said, is nearly a contemporary of ours, in comparison with the ancient Israelites; we have often his very words, and, although they will carry a different meaning to every heart, varying with the nature and experience of the individual, they nevertheless were spoken directly to men; they were not designed as subjects for abstruse discussion or dogmatic reasoning.

It is impossible to give an analysis which shall be in any way complete, of what is itself a brief analysis of the New Testament. A few lines of extract must suffice to show the tact with which this work is done. For instance: —

"But search and sift the idea of righteousness Jesus did. And though the work of Jesus, like the name of God, calls up in the believer a multitude of emotions and associations far more than any brief definition can cover, yet, remembering Jeremy Taylor's advice to avoid exhortations *to get Christ, to be in Christ*, and to seek some more distinct and practical way of speaking of him, we shall not do ill, perhaps, if we summarize to our own minds his work by saying, that he restored the intuition of God through transforming the idea of righteousness; and that, to do this, he brought a *method*, and he brought a *secret*. And of those two great words which fill such a place in his gospel, *repentance* and *peace*, — as we see that his Apostles, when they preached his gospel, preached '*Repentance* unto life' and '*Peace* through Jesus Christ,' — of these two great words, one, *repentance*, attaches itself, we shall find, to his *method*, and the other, *peace*, to his *secret*." Again: "And now, too, we can see why it is a mistake, and may lead to much error, to exhibit any series of maxims, like those of the Sermon on the Mount, as the ultimate sum and formula into which Christianity may be run up. Maxims of this kind are but *applications* of the method and secret of Jesus; and the method and secret are capable of yet an infinite number more of such applications.

Christianity is a *source;* no one supply of water and refreshment that comes from it can be called the sum of Christianity." "A method of *inwardness*, a secret of *self-renouncement;* but can any statement of what Jesus brought be complete, which does not take in his *mildness?* To the representative texts already given there is certainly to be added this other: '*Learn of me that I am mild and lowly in heart, and ye shall find rest unto your souls!*' Shall we attach mildness to the *method*, because, without it, a clear and limpid view inwards is impossible? Or shall we attach it to the *secret?* — the dying to faults of temper is a part, certainly, of dying to one's ordinary self, one's *life in this world. Mildness*, however, is rather an element in which, in Jesus, both method and secret worked; the medium through which both the method and secret were exhibited. We may think of it as perfectly illustrated and exemplified in his answer to the foolish question, *Who is the greatest in the kingdom of heaven?* — when, taking a little child and setting him in the midst, he said, 'Whosoever receives the kingdom of God as a little child, the same is the greatest in it.' Here are both inward appraisal and self-renouncement; but what is the most admirable is the 'sweet reasonableness,' the exquisite, mild, winning felicity with which the renouncement and the inward appraisal are applied and conveyed."

The two following chapters, "The Early Witnesses," and "Aberglaube reinvading," discuss the later books of the New Testament, and the appearance and spread of certain of the dogmas of the Church. He gives us instances of the way in which literal criticism has perverted the true meaning of texts, and draws, as it seems to us, discreetly an outline of the main differences between Catholicism and Protestantism: "And many of the reproaches cast by one on the other are idle. If Catholicism is reproached with being indifferent to much that is called *civilization*, it must be answered, So was Jesus. If Protestantism, with its private judgment, is accused of opening a wide field for individual fancies and mistakes, it must be answered, So did Jesus when he introduced his method. Private judgment, 'the fundamental and insensate doctrine of Protestantism,' as Joseph de Maistre calls it, is in truth but the necessary 'method,' the eternally incumbent *duty*, imposed by Jesus himself, when he said, 'Judge not according to the appearance, but judge righteous judgment.' 'Judge *righteous* judgment is the duty imposed; and the duty is not, whatever many Protestants may seem to think, fulfilled if the judgment be *wrong.* But the duty of inwardly judging is the very entrance into the way and walk of Jesus."

From the chapter entitled "Our 'Masses' and the Bible," we have

room for but a single brief extract: "Thus we have the authority of both Old and New Testament placed on just the same solid basis as the authority of the injunction to take food and rest, namely, that experience proves we cannot do without them. And we have neglect of the Bible punished just as putting one's hand into the fire is punished, namely, by finding we are the worse for it. Only, to *attend* to this experience about the Bible needs more steadiness than to attend to the momentary impressions of hunger, fatigue, and pain; therefore it is called *faith*, and accounted a virtue. But the appeal is to experience in this case just as much as in the other; only to experience of a far deeper and greater kind."

In his chapter, "The true Greatness of Christianity," we find the following: "But there is this difference between the religion of the Old Testament and Christianity. Of the religion of the Old Testament we can pretty well see to the end; we can trace fully enough the experimental proof of it in history. But of Christianity the future is as yet almost unknown. For that the world cannot get on without righteousness we have the clear experience, and a grand and admirable experience it is. But what the world will become by the thorough use of that which is really righteousness, the method and the secret and the secret reasonableness of Jesus, we have as yet hardly any experience at all." Again: "Walking on the water, multiplying loaves, raising corpses, a heavenly judge appearing with trumpets in the clouds while we are yet alive, — what is this compared to the real experience offered as witness to us by Christianity?"

It is with an earnest recurrence to these qualities of Christianity, to the appeal to the conscience and the self-renouncement it inculcates, that he closes this remarkable essay. Even those who are not convinced with the soundness of his theological views, will be unable to deny the reality of his religious feeling, as men know it in their moments of joy and grief when their hearts either forget dogmas entirely or use them but as a sort of language to express their emotions to the Unknown. The rejection of dogma, as Mr. Arnold shows, is apt to carry with it the rejection of the all-important truths which lie behind them and which they once expressed, but he seeks everywhere to show that these truths are essential to the well-being of man. That at times he may have missed the mark in this most difficult task, the ascertaining the meaning of men who undertook to express immortal things with all the limitations of language, it would be impossible to affirm. But we can assure every reader that he will find here a serious intention, and a sympathetic treatment which, if it does not convince, will, at any rate, be found extremely suggestive. It certainly

tends to help Christianity, however hostile it may be found to separate sects. Our extracts, copious as they have been, will not be found to have done the book full justice; we hope, however, that they may inspire some readers with a desire to study his interesting and valuable essay.

---

5. — *St. Peter, an Oratorio.* — By JOHN K. PAINE. Boston. 1873.

As text for his oratorio Mr. Paine has chosen the history of St. Peter as narrated in the Gospels, and has condensed it into the form of a consecutive story which shall present the most important incidents in the life of this disciple in the vivid and contrasting situations allowed by dramatic license. Strictest adherence to original Biblical texts, with freedom in their arrangement, has been observed throughout the work. The concentration and free combination of the events form a notable feature in the denial, where the condensed narrative renders the situation at once dramatic and varied, and intensifies the thus rapidly succeeding moments of the drama of Peter's life.

The oratorio begins in F minor, with slow $\frac{4}{4}$ movement. Though most of the work has been written on the principle that polyphonic style of composition is the truest musical exponent of Biblical expression, we are confronted at the very outset with a short but subtle account of modern innovation. Instead of the time-honored prelude or pastorale with its second theme *a fuga*, inseparable from the rigid "credo" of our musical forefathers, we find a prologue whose opening lines remind us by their freedom of treatment of our departure from strict ancestral tenets, and tell us of modern reform and philosophical conception. The introduction is such in the strictest sense, and, like those of Gluck, is but preparatory to and finds its climax in the opening chorus, whose powerful unison notes in C major, followed by the ascending of the tenor to the third and of the bass to the octave, proclaim like a blast of trumpets, "The time is fulfilled." The four parts then say in turn, "The Kingdom of Heaven is at hand," passing with full declamatory accent from C minor into G major. It would not be difficult to imagine this portion of the "Divine Call" as belonging directly to the orchestral introduction. It seems like a preparatory outcry to draw attention to the command to "repent and believe," which follows. At this juncture the voices glide into the old form of church music and pursue an impressive theme through strange modulations, back into the key of C major, where in almost breathless tones it repeats the earnest injunction to believe the glad tidings of God. The recitative which follows, narrating the meeting of Jesus with Simon and Andrew as they were fishing, is an unusually fine sample of *arioso* declamation, and,

like that in No. 9, is full of exquisite pathos. It may be regarded as a specimen of this kind of recitative commonly employed throughout the work.

After an attractive soprano aria, resembling in character of theme the preceding number, Jesus calls his twelve disciples together and sends them out to preach. In No. 4 the twelve respond to this call in the words of Luke i. 76–79, joined by a large chorus of unbelievers. The twelve (male voices) open the chorus with a sweet melody in unison, saying, "We go before the face of the Lord," passing in four-part harmony into D major. The entire chorus then repeats in the original key of B♭ the words of the twelve. Let those who are musical cast an unprejudiced eye at this number. We do not wish to discuss here that oft-disputed question among German theorists, when a melody may be expressive and when not; but we feel safe in predicting for this chorus a wide popularity. Both the melody of the twelve and that sung in response by the soprani are charming. At the end of this response the twelve voices, again in unison, say, "Whereby the dayspring from on high hath visited us to give light unto them that sit in darkness and in the shadow of death." The diminished minor chords into which the full chorus afterwards modulates, where the word "darkness" occurs, and the words "in the shadow of death," give a deep undertone of solemnity. We are conscious of a load removed from the heart as the whole chorus, in six-part harmony, glides, *pianissimo*, into an almost inimitable phrase in F major. The effect of the male voices holding the chord of the seventh, while the sopranos and altos pronounce for the last time their solemn words, the altos falling to the diminished ninth, is thrilling, and with the sudden revolution of feeling as they all float into that simple but beautiful phrase in F, is one of the most marked in the whole work. The character of all the parts of this number is strikingly melodious, and the rhythmical flow of the entire piece is natural and pleasing.

Space will not allow a minute analysis of each number, and we must therefore make a rapid *résumé* of those pieces which at first hearing seem to be the best and most pleasing. First, then, we select the part of the barytone — Peter — as the most interesting and best of the solo parts. With the exception of some passages of difficult intonation, the entire part of St. Peter is free, vigorous, and of exalted, manly tone. The aria, "O God, forsake me not!" is fine, and the aria, "Ye men of Judæa," we pronounce, without hesitation, to be one of the best pieces of solo composition in the church music of this century. From the first to the last note there is not a moment of halting or apparent loss of the thread of musical discourse. The declamation is fine and apt; the

rhythm powerful and flowing, sustaining its *maestoso* character to the end. Note the simple, but forcible opening measures and their fine declamation; the spirited interlude and following masterly rendering of the text; the melodious nature of "and your sons," with the dramatic ending, "and your old men shall dream dreams," the very tone of which is prophetic. The dramatic character of the composition at this point is extraordinary.

Of the soprano airs, the first is sweet and tender; and the "O man of God" strongly dramatic, though too heavily accompanied for ordinary voices.

The tenor has the narrative to tell, and, with one exception, sings in recitative and declamatory arioso. Among the latter are some exceedingly choice bits of melody, expressively tender wherever Jesus is represented as speaking; of these, "Simon, son of Jonas, lovest thou me?" and "Feed my lambs." The cadence also where Jesus tells Peter, "Thou shalt deny me thrice," is full of meaning.

Of the solos for contralto we call special attention to the passionate outcry (No. 12), "And lo, Judas came," — a recitative of great power.

Another characteristic contralto recitative is that telling of Peter's third denial." And he went out and wept bitterly," with its A flat in the vocal part against the A natural of the accompaniment on the word "bitterly," is a very dramatic expression.

There are, however, places in the contralto part where the declamation is marred by a certain stiffness in the musical intervals; and there is an occasional abruptness which disturbs one; but these are more than compensated by the beauty of many other passages.

Most prominent among the choruses are Nos. 1 and 4, already described; the bright chorus in C major, "The Church is built," whose chief characteristics are a sharply defined declamation, majestic movement, and vigourous harmony; No. 13, "We hid our faces from him," with a melodious theme in F minor, a short and beautiful number, abounding in simple pathos; the agitated and finely declaimed chorus No. 14, where the people angrily declare to Peter, "Surely thou art one of them," in threatening measures of D minor, a number whose finely varied dramatic situations and terse musical expression amply repay study; and No. 19. This last forms the climax of and closes the first part. From No. 13 there is a steady crescendo which culminates in No. 19.

The choruses of the second part are also telling, especially the closing chorus and "This is the witness of God"; and, "The voice of the Lord," with its highly original theme. We cannot omit mentioning No. 37, whose eight and nine part harmony, with its barytone obligato, betokens extraordinary gifts of composition.

Of the orchestration of the oratorio it is impossible to write in detail without a score. It is just as impossible to attempt a full description, after but one hearing, of an imperfect orchestral rendering.

The narrative style of the libretto necessitates employing continually a great deal of declamation. But we find less *secco* recitative, and a smaller number of all kinds of recitative than in the "Elijah" or the "Creation," and somewhat less of arioso than in the "Elijah," "Samson," "St. Paul," "Naaman," "Eli," and other popular works have even more recitative than the "Elijah." Nor do we find any striking similarity between "St. Peter" and Mendelssohn's "St. Paul," as has been stated in a recent criticism. If there be a similarity, it is one of form, surely not one of matter. There is perhaps a vague likeness in the internal arrangement, the narrative style, and the chorals. The chorus, "Behold are not all," may remind one of certain Jewish choruses in "St. Paul." But this is all. The music, both in spirit and style, is certainly Mr. Paine's own. To a profound student of Bach,— and we all know Mr. Paine to be such, — "St. Paul" is but a huge imitation of the Sebastian Bach "Passion-Musik." Indeed not musicians alone, but well-educated musical *dilettanti*, are sensible of a great similarity in model between "St. Paul" and "St. Matthew." Bach's "Passion-music" has in turn borrowed its model from the Heinrich Schütz cantatas, in their turn modelled on the Turbæ, or short dramatic choruses of the Jewish crowd in the Passion-music of the Middle Ages. Thus an intimation that Mr. Paine had borrowed from Mendelssohn's "St. Paul" is in any event without any weighty significance. We might as well say that the great "St. Mark" of Tintoretto was a copy of Titian, because the *colorito* of the latter had been profoundly studied by Tintoretto, or because, being disciples of the Venetian school, Titian was the elder.

There is but one feeling among lovers of music, regarding the production in Boston of "St. Peter." All wish it. The oratorio, however it may be criticised, remains, and will remain, a master work. Whatever its eventual destiny, it deserves a place now on the repertory of Boston oratorios. Its great artistic merits demand public recognition, and we doubt not that a fine performance of the oratorio will present its numberless beauties in a light so convincing to the hearts of sincere followers of all that is good and true in art, as will make "St. Peter" for a long time popular among us.